JOINT VENTURES AS MECHANISMS FOR ACCELERATING EQUITABLE WATER ALLOCATION AND AGRICULTURAL DEVELOPMENT

LESSONS LEARNT FROM THE LOWER SUNDAYS RIVER AND GREAT FISH RIVER CATCHMENTS

Report to the

Water Research Commission

by

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WRC report no. 3241/1/25

ISBN 978-0-6392-0759-9

This is the final report of WRC project no. C2023/2024-01258.

EXECUTIVE SUMMARY

1.1 BACKGROUND

The contribution of resource poor farmers to the South African agricultural economy is continually adversely impacted by a host of factors that limit their potential to positively participate in agricultural development. There have been numerous government policies and interventions targeted towards supporting emerging farmers to increase their capacity to contribute positively to the agricultural economy against the backdrop of historical inequities created by the apartheid system.

The issue of water allocation reform (WAR) in irrigation schemes, as implemented by the Department of Water and Sanitation (DWS), has been an example of an attempt to effect change in the way in which water for productive purposes is distributed amongst South African farmers. One other governance arrangement and support measure that has been attempted by the state is that of joint ventures (JVs). JVs can be defined as a strategic partnership in which the government facilitates the pairing of an emerging farmer with an established commercial farmer for capital and economic purposes, achieved through the medium of WAR.

Empirical evidence reveals that JVs have experienced multiple challenges in achieving equity imperatives for emerging farmers in the South African agricultural context. This misalignment between institutional arrangements, mandate, and governance processes on the one hand, and the equity imperatives on the other hand, deserves urgent attention.

1.2 OBJECTIVES

The study was informed by the following main objectives:

1) To examine the disparity between relevant policy intents and implementation on equity goals via joint ventures within the context of water allocation reforms (WAR) in the Lower Sundays River and Great Fish River Catchments.
2) To analyse the enablers and/or barriers to the benefits intended for emerging farmers via joint ventures. Such benefits may include social, economic, livelihoods and technical know-how.
3) To analyse the governance dimensions, and the suitability of joint ventures for realising equity, efficiency, and sustainability imperatives in the context of water allocation reforms within the Lower Sundays River and Great Fish River Catchments.
4) To explore governance and institutional measures/arrangements/systems, including polycentricity, necessary to support emerging/resource poor farmers at the farm scale to achieve the imperative of equity.

1.3 METHODOLOGY

The study combined several methods and data collection techniques to achieve its objectives: document analysis/desktop study, workshops, in-depth interviews, and questionnaire development. Document analysis involved reviewing relevant literature regarding joint venture partnerships in the study areas to understand the historical context and present realities. Semi-structured, in-depth interviews were conducted with 34 participants across the two study sites between October 2023 and February 2024, including emerging farmers (in and out of JVs), commercial farmers, and key institutional actors across the land-water-agricultural nexus.

For objective 1, a document analysis/desktop study of 11 policy documents was conducted using an 8-component equity analysis framework. For objective 2, the sustainable livelihoods framework was applied to analyse interview data, considering livelihoods in terms of access to five types of capital assets: human, natural, financial, physical and social. For objectives 3 and 4, analysis of governance modes (hierarchical, market, network, hybrid) using interview data and literature review on polycentricity and governance theory was employed.

A thematic analysis approach was employed for the data analysis based on the 6-step framework for thematic analysis developed by Braun and Clarke (2006). The data from transcribed interviews and questionnaires were compiled and organised in Microsoft Excel 2016 and each question and response coded deductively (applying theory informed analytical rubrics), grouped, and synthesised into the relevant findings sections related to each objective.

1.4 RESULTS AND DISCUSSION

1.4.1 Chapter 3: Policy Analysis

The policy analysis revealed significant disparities between policy intent and implementation outcomes. Policy-practice gaps exist between the strong equity intentions of the hierarchical policies and the weak implementation capacity of the state. The analysis reveals that most of the documents allude to different dimensions of equity. Of particular importance is the emphasis on inclusion, particularly of emerging farmers. However, discussion on how inclusion might be achieved, or what inclusion might even mean is limited in the relevant policy documents, suggesting the need for a more comprehensive framing of inclusion and inclusion process mechanisms within policies or subsequent implementation plans derived from policies.

What is particularly lacking in many of the policy documents is a framework for monitoring and evaluation. Clearer quantitative and qualitative targets, which may enhance precision in monitoring progress towards equity goals, are needed. In summary, the analysis reveals a significant gap between the equity goals articulated in policies and the actual implementation outcomes (on-the-ground experiences of farmers) in joint ventures and water allocation reform.

1.4.2 Chapter 4: Livelihood Benefits Analysis

The extent to which WAR arrangements such as JVs and the revitalisation of small-scale irrigation schemes have resulted in tangible social, economic and livelihood outcomes for the emerging farmers they are intended for is hinged on multiple factors. The results showed that despite emerging farmers having years of farming experience by virtue of growing up in farm labourer families, this did not translate to formal training in agriculture or an educational level above secondary school. The findings indicate that there are various types/modalities of JVs with their own unique arrangements and variation in the emerging farmer partners that constitute them across the two case studies (joint ventures, contract farming, inclusive business models, strategic partnerships, farmworker equity-sharing schemes, and mentorship programmes/partnerships).

Analysis of the five capital assets revealed mixed outcomes. Human capital showed variable access to skills and knowledge development through structured training programs and high-level expertise, but with limited evidence of the capacity to operate independently. Natural capital benefits included access to water rights and formal land ownership, though often without operational control. Financial capital access remained limited, with many farmers trapped in JV arrangements due to high water tariffs. Physical capital

provided access to commercial facilities and infrastructure, but with persistent equipment problems and high rental costs. Social capital showed expanded networks through industry associations, though with limited decision-making influence within these networks.

The diversification of incomes by emerging farmers in JVs is seen to be commonly adopted by farmers with higher educational levels, suggesting an awareness that the economic gains from such partnerships are often limited. Managing unrealistic expectations, therefore, becomes a key challenge in evaluating the livelihood benefits accrued by emerging farmers in JVs.

1.4.3 Chapter 5: Governance Analysis

Current governance approaches fail to address the three key governance challenges: policy-practice gaps, competing logics between market and transformation imperatives, and power asymmetries. There is competing logic between market imperatives for profitability, particularly in an international market context, and the high-level policy goals for transformation. Power asymmetries are evident where commercial farmers are leveraging market governance expertise while emerging farmers rely on hierarchical protections (state-directed transformation and redress efforts through water allocation reform policies and mechanisms).

The study identifies four governance modes operating within joint ventures: hierarchical governance (state-directed mandates), market governance (commercial efficiency imperatives), network governance (collective coordination), and hybrid governance (blending elements of hierarchical mandates and market-driven commercial logic). However, existing hybrid governance arrangements reproduce rather than transform power asymmetries.

The study recommends adopting a polycentric governance model that creates multiple, largely autonomous decision-making centres that coordinate among themselves whilst paying attention to the motivation, aspiration, and collective voices of all institutions involved. Proponents of polycentric governance believe that functional polycentric systems are more adaptive because of their design structure. Polycentricity presents an opportunity for the diverse motivations of partners to be considered. In a context where emerging farmer priorities differ vastly from those of commercial farmers, there is value in adopting governance models that will not prioritise one grouping's aspiration over another in seeking to meet equity goals.

1.5 CONCLUSIONS AND RECOMMENDATIONS

The study demonstrates that whilst joint ventures represent a potentially valuable mechanism for advancing equity goals in water allocation reform, current institutional and governance arrangements severely limit their effectiveness, with evidence showing many JV arrangements are already showing signs of collapse or have resulted in HDI farmers relinquishing water rights to commercial partners.

The research identified substantial financial barriers forcing HDI farmers into subordinate positions. Under previous water pricing regimes, farmers faced immediate payment obligations of up to ZAR 750,000 for water rights plus Environmental Impact Assessment costs before planting a single crop, despite production commencing only after 5-10 years. This forced reliance on commercial partners who leveraged their financial capacity to demand inequitable equity shares. The revised Raw Water Pricing Strategy (2024) offers transformative potential through five-year complete waiver periods for resource-poor farmers and phased charging structures (20% per annum from years 6-10), addressing the perverse incentive requiring payment for water not yet in use. However, implementation will require dedicated

monitoring and complementary support mechanisms to prevent commercial partners from circumventing tariff reductions through alternative cost arrangements. Without comprehensive reform across pre-qualification, founding documentation, capacity development, financial support, and governance structures, JV arrangements risk perpetuating rather than redressing historical inequities in water allocation and agricultural transformation.

1.5.1 Main Recommendations:

The study proposes 11 interrelated recommendations to address the fundamental challenges identified in current JV arrangements. The high-level recommendations presented below are each accompanied by specific concrete recommendations in the report body:

1. Pre-qualification criteria: Establish rigorous assessment systems evaluating HDI farmer readiness before committing state support and water allocation, with minimum competency requirements covering agricultural knowledge, literacy levels, and prior farming experience.
2. Founding documentation: Develop comprehensive formal JV agreements with embedded monitoring and evaluation frameworks tracking HDI competence development. These should be accompanied by mandatory annual independent audits and dedicated departmental oversight subcommittees.
3. Power asymmetry reform: Address power differentials through mandatory capacity building programmes, regulatory penalties for non-compliance, and formal whistleblowing mechanisms. Capacitate and enable extension officers as boundary agents to support HDI farmers.
4. Profitability timeframes: Clarify expectations in founding documents regarding establishment periods (e.g., 7-10 years for citrus), implement diversified farming portfolios providing interim income, and establish structured livelihood support during establishment.
5. Decision-making participation: Create formal governance structures requiring HDI representation in production planning and financial decisions. We recommend engagement through quarterly forums and transparent information systems enabling access to production data and market information.
6. Capacity development pathways: Implement structured progression frameworks moving from intensive mentorship towards managed autonomy, with formal certification at progression points and explicit succession planning within each JV.
7. Extension officer transformation: Designate extension officers as boundary agents with targeted training on JV dynamics, explicit responsibilities for facilitating HDI access to support systems, and regular liaison with departmental oversight.
8. Water rights protection: Leverage the Regulator Charge mechanism under the revised Raw Water Pricing Strategy to monitor water rights transfers and fronting practices, with corrective support activated when dysfunction is detected.
9. Financial burden relief: Implement the revised Raw Water Pricing Strategy's five-year complete waiver period and phased charging framework (20% per annum years 6-10), establish state support for EIA costs, and create dedicated credit lines through state-owned agencies.
10. Fiscal sustainability: Establish profitability-triggered repayment mechanisms for state expenditures, structured as progressive levies rather than lump sums, with ring-fenced funds creating self-sustaining transformation financing cycles.

11. Monitoring and evaluation frameworks for water allocation reform equity outcomes: Develop standardised equity indicators, transparent reporting mechanisms, and/or participatory feedback channels to evaluate WAR policy implementation against equity imperatives.

These recommendations are ambitious and, in some cases, intentionally provocative. However, bold and dedicated intervention is required to transform JV arrangements from mechanisms reproducing power asymmetries into genuine partnerships enabling emerging farmers to become active participants rather than passive beneficiaries in South Africa's agricultural transformation.

The study identifies priority areas for further research, including monitoring and evaluation framework development, pre-qualification effectiveness evaluation, polycentric governance comparative analysis, and longitudinal impact assessment of the revised water pricing strategy between 2030 and 2035.

ACKNOWLEDGEMENTS

First and foremost, we would like to acknowledge the Water Research Commission for providing funding to make this research possible.

The following members of the Reference Group and stakeholders are acknowledged for their time and valuable contributions to shaping this project.

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ACRONYMS & ABBREVIATIONs

Acronym/Abbreviation	Explanation
CEO	Chief Executive Officer
CGA	Citrus Growers Association
CMA	Catchment Management Agency
CMF	Catchment Management Forum
CoGTA	Cooperative Governance and Traditional Affairs
DALRRD	Department of Agriculture, Land Reform and Rural Development
DFFE	Department of Forestry, Fisheries and Environment
DHET	Department of Higher Education and Training
DMRE	Department of Mineral Resources and Energy
DTIC	Department of Trade, Industry and Competition
DWS	Department of Water and Sanitation
EF	Emerging Farmer (interview coding)
EIA	Environmental Impact Assessment
JV/JVs	Joint Venture/Joint Ventures
KI	Key Informant (interview coding)
LSRC	Lower Sundays River Catchment
LSRCMF	Lower Sundays River Catchment Management Forum
LSRV	Lower Sundays River Valley
LSRWUA	Lower Sundays River Water Users Association
NDP	National Development Plan
NIPMO	National Intellectual Property Management Office
NWA	National Water Act
ORRS	Orange River Re-planning Study
RSA	Republic of South Africa
RU-HREC	Rhodes University Human Research Ethics Committee
SMME	Small, Medium and Micro Enterprises
SRCC	Sundays River Citrus Company
SRVC	Sundays River Valley Collaborative
SRVM	Sundays River Valley Municipality
WAR	Water Allocation Reform
WRC	Water Research Commission
WSA	Water Services Authority
WSP	Water Services Provider
WUA	Water User Association

1 INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

The contribution of resource poor farmers to the South African agricultural economy is continually adversely impacted by a host of factors that limit their potential to positively participate in agricultural development. There have been numerous government policies and interventions targeted towards supporting emerging farmers to increase their capacity to contribute positively to the agricultural economy against the backdrop of historical inequities created by the apartheid system.

The issue of water allocation reform (WAR) in irrigation schemes, as implemented by the Department of Water and Sanitation (DWS), has been an example of an attempt to effect change in the way in which water for productive purposes is distributed amongst South African farmers. One other governance arrangement and support measure that has been attempted by the South African government is that of joint ventures (JVs), which can be defined as a strategic partnership in which the government facilitates the pairing of an emerging farmer with an established commercial farmer for capital and economic purposes, achieved through the medium of WAR.

WAR within the context of JVs at farm scale has been viewed as a tool to effectively achieve the equity imperative contained within the National Water Act (NWA) No. 36 of 1998. Literature evidence suggests that JVs face multiple difficulties in achieving the ideals of equity in the South African context (Davis and Lahiff, 2011; Woodhouse, 2012; Lahif et al., 2012); van Koppen et al. (2018) and Bunce (2020).

Research also reveals that WAR and policy have not brought about the expected socio-economic and livelihood benefits to resource poor/emerging farmers that are intended. It is within this context that the proposed research is positioned. The research aims to investigate governance and institutional measures necessary to support emerging/resource poor farmers at the farm scale, drawing on best international practices. It is argued that in order to achieve success there is a need to explore governance and institutional measures attuned to the local realities and farmers' perceptions and power dynamics at the farm scale with political influence, polity and policy agendas across scales of government within the water-land-agriculture nexus. The study makes use of the Lower Sundays River and Great Fish River catchments as case studies to co-explore social, institutional and governance innovations to accelerate equity goals at the farm scale alongside farmers' perceptions of WAR and JVs and the institutional and governance challenges that may impede success.

1.2 RATIONALE, BACKGROUND AND STUDY AREA CONTEXT

Agricultural development in South Africa cannot be achieved without addressing the need to redress the inequities of the past. The imperative to realize equity goals underpins most policies and government interventions in post-apartheid South Africa (Sihlobo, 2020). An area where equity drive has been prominent is the nexus between water, land, and agriculture (food security) in relation to livelihood security and eradication of poverty (Drimie & Mclachlan, 2013). Within the water-land-agriculture nexus, various Departments e.g., the Departments of Water and Sanitation; Agriculture, Forestry and Fisheries; and that of Rural Development and Land Affairs have developed various policies to support emerging/resource poor farmers through small scale irrigation schemes (Ncube et al., 2017). One example of such support systems has been joint venture partnerships.

Joint venture partnerships are understood as strategic partnerships in which the government facilitates the pairing of an emerging farmer with an established commercial farmer for capital and economic purposes. In the context of the Department of Water and Sanitation, the aim of joint venture partnerships was envisioned to be achieved through water allocation reforms (WAR). However, empirical evidence suggests that to date, equity imperatives through support to emerging or resource poor farmers have not been realized. Literature reveals a number of reasons for this failure including but not limited to i) financial viability of the irrigation schemes, ii) land ownership/tenure, crop-soil suitability, iii) model of business operation, iv) a lack of a systems approach to planning and implementation of equity measures, v) governance and institutional measures needed to achieve equity goals at farm scale and vi) the imperative for capacity development for emerging/resource poor farmers in terms of water use efficiency, farm operation and business model, including access to credit and market (Bitzer & Bijman, 2014; James & Woodhouse 2017; Bourblanc & Anseeuw 2019; Bunce, 2020). Examples of these challenges can be seen in studies such as those by Fanadzo et al. (2010) in the Zanyokwe Irrigation Scheme and Ncube (2018) in the Breede-Gouritz Catchment (BGC) that have demonstrated that emerging farmers are still lagging in terms of equity and access to water resources. As a result of these constraints, emerging farmers have not contributed their full potential to the South African economy. This needs to be urgently addressed in a post Covid-19 economy. For example, Denby et al. (2017) explain that the NWA and various Water Allocation Reform (WAR) programs have not sufficiently addressed the inequalities stemming from apartheid and have neglected many of the issues plaguing black farmers and the rural poor at the local levels. A report by Hollingworth and Matsetela (2012) on water allocation in South Africa highlighted flaws in the design of institutional aspects of WAR as well as failure to implement WAR policies and strategies. In the 2015 irrigation strategy published by the then Department of Agriculture, Forestry and Fisheries (DAFF), governance and institutional measures necessary to accelerate the profitable participation of emerging or resource poor farmers (henceforth called 'emerging farmer') in small-scale irrigation schemes were highlighted as a top priority challenge that needed urgent research attention (DAFF, 2015).

The strategy document and the draft Business Plan on the revitalisation of irrigation schemes (DAFF, 2012) acknowledged that the focus of previous research and departmental interventions has been on technical, infrastructural, and economic aspects of irrigation schemes in relation to the participation of emerging farmers (Fanadzo et al., 2010). However, with the evident failure of technical-infrastructural focus interventions (Muchuru et al., 2019), it is now clear that there is an urgent need to explore the nature of governance and institutional structure and measures necessary to support emerging farmers at the farm scale. Further, cross-departmental integration and coordination, and a systems thinking view of the water-land-agriculture nexus have been identified as critical if the narrative about emerging farmers is to be turned around. The premise for the study argues that governance and institutional measures attuned to the local realities and farmers' perceptions, power differentials and dynamics at the farm scale are needed. But for such governance and institutional arrangements to be successful, it also needs to be connected and able to influence political, policy and polity agenda across different scales within the water-land-agriculture nexus. One of the interventions that has been made to accelerate equity imperative in the water-agricultural sector is joint venture partnerships (Mayson, 2003). For example, Mayson (2003) suggests that for emerging farmers to develop, they should opt to use agricultural land tenure rights leased from government and water rights ownership to initiate joint venture partnerships, while the Department of Water and Sanitation (2018) has also encouraged commercial farmers to establish joint venture partnerships through land-for-water deals. This means that water rights are only granted to commercial applicants if they form partnerships with water allocation beneficiaries (Mayson, 2003). Binswanger-Mkhize (2014) observed that the Department of Rural Development and Land Reform (DRDLR) had made strategic partners a requirement for the recapitalization and development program DRDLD (2014). However, Fraser (2007) argues, "even though the approach is being promoted by

government as a way to protect the viability of the land and ensure the transfer of skills to the beneficiaries, the approach may turn out to be less favourable for the beneficiaries". In the Lower Sundays River Catchment, joint venture partnerships are already showing signs of collapse.

1.2.1 Land Reform Programmes in the Study Context

Understanding the land reform policy mechanisms operating within the study areas contextualises the emergence of joint venture partnerships. Since 2007, Black citrus growers in the Lower Sundays River catchment have accessed land through multiple government redistribution programmes, with many subsequently entering into beneficiary farm-management agreements with the Sundays River Citrus Company (SRCC). These partnerships represent the practical implementation of state-led agricultural transformation efforts within a commercially viable citrus production context.

The land reform sub-programmes through which Black citrus growers in the study area have obtained land and support include:

- Settlement/Land Acquisition Grant (SLAG): Utilised in the early post-1994 phase to assist poor and landless households to access land. The transition from SLAG to LRAD signalled a policy shift towards supporting the development of Black commercial farmers, consistent with the Broad-Based Black Economic Empowerment Act (2003). Since 2006, SRCC has partnered with at least 14 Black citrus growers whose land access was facilitated through mechanisms emerging from this evolving policy landscape.
- Land Redistribution for Agricultural Development (LRAD): Introduced after April 2000 to replace SLAG, LRAD broadened eligibility beyond the poorest groups and allowed for the inclusion of beneficiaries pursuing commercially oriented farming. The programme provided grants scaled to beneficiary contributions, enabling access to larger and more productive agricultural holdings. Many early SRCC-linked land-reform farms were supported through this mechanism, establishing the foundation for current joint venture arrangements in citrus production.
- Proactive Land Acquisition Strategy (PLAS): A redistribution mechanism through which the state proactively acquires land for redistribution rather than relying on the willing-seller/willing-buyer model that characterised earlier programmes. PLAS was introduced to accelerate land redistribution and enable more strategic targeting of productive agricultural land. PLAS remains a central instrument currently used in the catchment for facilitating HDI farmer access to commercial citrus production land.
- Settlement and Production Land Acquisition Grant (SPLAG): A complementary grant mechanism enabling the state to acquire land for settlement or agricultural production purposes. SPLAG has been utilised for both group and individual beneficiaries, providing the financial resources necessary for land acquisition whilst leaving operational arrangements to be determined through subsequent partnerships or independent operation.
- Recapitalisation and Development Programme (RADP): Introduced to support distressed land-reform farms by providing grants for infrastructure rehabilitation, production inputs, and mentorship arrangements. RADP emerged in response to evidence that many land reform beneficiaries lacked the financial and technical resources to establish commercially viable operations. This programme has been critical for improving the productivity and commercial viability of beneficiaries partnered with SRCC, addressing infrastructure deficits and establishing the foundation for joint venture arrangements.

These multiple policy instruments reflect how the approach to agricultural land reform in South Africa has evolved over time, moving from poverty alleviation through land access towards commercially oriented agricultural transformation. However, as documented in subsequent chapters, the extent to which these mechanisms have achieved their equity objectives remains contested, with joint venture partnerships in their current form emerging as both a support mechanism and a potential constraint on HDI farmer autonomy and economic advancement.

1.2.2 Challenges in Achieving Equity Through Joint Ventures and Water Allocation Reform

Empirical evidence from research conducted in the Lower Sunday River catchment over the past 5 years suggests that the collapse of joint venture partnerships may be due to a number of factors including power dynamics, failure in coherent policy implementation, equitable access to water and related resources, ways in which joint venture partnerships are set up, operated and the profits accruing thereof, disputes over the contribution of the partners, and powerful alliances influencing joint venture partnership processes and their outcomes. For example, Davis (2014), argues that the way joint venture partnerships are designed in the context of South African land reform and WAR, results in: (i) contradictory articulations of the terms of and conditions of access to and ownership of the means of production (influenced by the wide range of interests, motives and expectations involved) (ii) uneasy alliances, compromises and contestations amongst different interest groups in an ever-shifting multi-actor landscape; and (iii) a "detached version of capital accumulation, with agricultural corporate interests being able to capture most of the benefits of the partnership". These views have been supported by Ntsholo (2014), who argues that joint venture partnerships are fundamentally problematic in that they are informed by colonial and apartheid ideology and philosophy, and that these partnerships are always in favour of established commercial farmers who often run their affairs.

These empirical findings thus raise two key questions i) how have joint venture partnerships contributed to equity imperatives and livelihoods security of emerging farmers, ii) if joint venture partnerships have proved to be a failure, what other governance and institutional arrangements, particularly those that are oriented to three modes of governance (hierarchical, network and market governance) that can be implemented to address the equity imperatives? The concept of polycentricity as a governance approach has been advanced in this regard, but the question that remains is the form and depth in which such a concept should take in practice, given the multifaceted challenges facing emerging farmers and the need to achieve equity rapidly. Therefore, a key objective of the proposed research is to explore governance and institutional measures, including polycentricity, necessary to support emerging farmers at the farm scale to achieve the imperative of equity as we move into a post COVID-19 era. It needs to be noted that when one engages deeply with the relevant sectoral legislation and policies, such as the National Water Act (Act No 36 of 1998), polycentricity is envisaged as a governance approach, but in practice, the top-down, command and control government approach to governance has dominated the various sectors. This is a critical reason for the failure of small-scale irrigation schemes and joint venture partnerships for emerging farmers because the planning and implementation processes did not adequately capture the social, economic, ecological, and power dynamics at the farm and local scales (Van Averbeke et al., 2011). Therefore, this project seeks to explore the disparity between policy intent and implementation of equity goals in the land-water-agriculture nexus as experienced by emerging farmers within the context of joint venture partnerships in the Lower Sundays River and Great Fish River catchments.

A recently concluded WRC project in the Lower Sundays River catchment (Odume et al., 2022) has clearly demonstrated the difficulties of realizing equity goals within the current institutional and governance context. Despite water allocations to emerging farmers in the Lower Sundays, for example,

the allocated water is not put to productive use, yet they are required to pay water bills, which further burden the capabilities of these emerging farmers to mobilize resources for productive farming enterprise. For the emerging farmers to be able to put allocated water to productive use, upfront investment is needed in the form of training, support, extension services, etc., which current institutional arrangements and mandates are not designed to do. This misalignment between institutional arrangements, mandate, and governance processes on the one hand, and the equity imperatives on the other hand, deserves urgent attention. This study contributes to this knowledge gap by co-exploring social, institutional and governance innovation to accelerate equity goals at the farm scale. It further surfaces the farmers' perceptions of WAR and JVs and the institutional and governance challenges that may prevent the success of emerging farmers in the Lower Sunday River and Great Fish River catchments.

This study is of critical interest to the Eastern Cape Regional Office of the Department of Water and Sanitation. The then Department of Water Affairs pursued a policy of supporting emerging farmers by setting aside water allocation for irrigation purposes. In the Eastern Cape, the policy was supported and informed by several studies, including the Orange River Re-planning Study (ORRS). The findings of the ORRS study recommended 5156 ha (rounded off to 5000 ha) be set aside within the Eastern Cape for emerging farmers, for the purposes of irrigation farming. The 5 156 ha was distributed as follows: Cradock 18 ha, Masipatisane 20 ha, KwaNjoli 84 ha, Tyhefu 860 ha, Enon Mission 296 ha, Vaalhoedskraal 188 ha, Barkley Bridge 3000 ha and Addo 690 ha. Much of the water allocation set aside has been developed, but its social, economic and livelihood impact on emerging/resource poor farmers within the Lower Sundays River catchment remains to be investigated. Therefore, using the Barkley Bridge irrigation scheme in the Lower Sundays River catchment as a case study, this study aims to examine the social, economic and livelihood benefits accrued to emerging farmers as a result of the water allocation set aside by the Department of Water and Sanitation (DWS). A comprehensive study area description is provided in Chapter 2. This is important to establish whether the objective of the policy pursued by the DWS is being realized, and to explore institutional and governance measures necessary to accelerate equity imperatives in the sector. Therefore, the overall aim of the proposed study is to investigate governance and institutional measures necessary to support emerging farmers at the farm scale within the context of joint venture partnerships and water allocation reform, and to analyse the social, economic and livelihood impacts flowing from WAR and JVs to emerging farmers within the Lower Sundays River and Great Fish River catchments.

THE HISTORICAL DEVELOPMENT OF JVs IN THE CASE STUDY AREAS

Type of JV	General description	Proportion studied	Historical development in the case studies
Farmworker equity-sharing schemes	Privately owned farming operations that are generally restructured as companies. The original owner of the farm and the farmworkers become shareholders in the enterprise, sometimes with a third-party investor	4	These schemes developed as institutional arrangements through which farmworkers and community members, traditionally excluded from ownership and decision-making, acquired equity stakes in commercial farming enterprises alongside established agricultural firms or landowners. In the Lower Sundays River Catchment, the development of farmworker equity sharing schemes is closely linked to the consolidation of large-scale, capital-intensive citrus production supported by extensive state investment in water infrastructure through the Orange-Fish-Sundays Transfer Scheme. Historically, farmworkers in this catchment participated in the agricultural economy primarily as wage labourers, with limited opportunities for asset accumulation or skills advancement.

Strategic partnerships	A joint venture or other form of collaboration between an established commercial firm and a new (or "emerging") group of workers, shareholders, small farmers, entrepreneurs, or community members with limited commercial experience and little or no access to finance or leading-edge markets.	3	Strategic partnerships in this context developed primarily in the post-1994 period, driven by land reform, black economic empowerment, and corporate social responsibility objectives. These partnerships typically took the form of joint ventures or production and marketing agreements between established citrus producers and emerging farmers or worker groups, aimed at facilitating access to water rights, finance, skills, and global markets while maintaining commercial viability within a competitive export-oriented sector.
Mentorship programmes/partnerships	A form of alliance between established commercial farms and developing farms/farmers where the former provides complementary mentorship to the latter in the form of addressing specific areas where both farms experience the same strengths and weaknesses.	4	Mentorship agreements in the Lower Sundays River Catchment and the Great Fish River Catchment (Tyhefu Irrigation Scheme) developed in response to contrasting agrarian structures, resource endowments, and historical trajectories of agricultural development. In both study areas, mentorship emerged as a mechanism to address disparities in skills, experience, and access to markets between established commercial actors and emerging or smallholder farmers, but the form and function of these agreements differed substantially.
Contract farming	An agreement between a farmer and a buyer, ranging from simple oral arrangements to formal written documents, in which parties formally commit to sell and buy specific volumes or acreages under pre-established conditions.	2	Contract farming in the Lower Sundays River Catchment and the Great Fish River Catchment (Tyhefu Irrigation Scheme) developed as a specific form of strategic partnership aimed at linking emerging producers with established commercial firms under conditions of unequal access to land, water, capital, and markets. Historically, contract farming evolved as a risk-management and coordination mechanism through which commercial firms could secure reliable supply while integrating producers with limited commercial experience into formal agricultural value chains.

1.3 PROJECT AIMS

The project is informed by the following main objectives:

1. To examine the disparity between relevant policy intents and implementation on equity goals via joint ventures within the context of water allocation reforms (WAR) in the Lower Sundays River and Great Fish River Catchments.
2. To analyse the enablers and /or barriers to the benefits intended for emerging farmers via joint ventures. Such benefits may include social, economic, livelihoods and technical know-how.
3. To analyse the governance dimensions and the suitability of joint ventures for realizing equity, efficiency, and sustainability imperatives in the context of water allocation reforms within the Lower Sundays River and Great Fish River Catchments.
4. To explore governance and institutional measures/arrangements/systems, including polycentricity, necessary to support emerging/resource poor farmers at the farm scale to achieve the imperative of equity.

1.4 METHODOLOGICAL AND CONCEPTUAL APPROACH

1.4.1 Data Collection Methods

The study combined several methods and data collection techniques to achieve its objectives: i) document analysis/desktop study, ii) workshops, iii) in-depth interviews, iv) questionnaire development.

Document Analysis: Relevant literature regarding joint venture partnerships in the study areas was reviewed to understand the historical context and present realities. Online resources from government

departments and water user associations were accessed to gather baseline information on joint venture partnerships. This allowed for tracking the impacts of joint venture partnerships, their governance structures, historical perspective and perceptions of both emerging and commercial farmers.

Workshops: Workshops were conducted with stakeholders (farmers in JVs, water user association officials, local traditional authorities, government and development agency officials) for each case study. Two workshops were conducted during the initial stages of the project. Workshops served as platforms to introduce the project, gain support for the project activities and enable co-learning and knowledge co-production about the case study contexts and implementation of water allocation reform initiatives in the two areas. Based on Canham et al. (2019), the following dimensions were considered in their design: i) power differentials among participants, ii) diversity of interests and values, iii) sectoral representation iv) open engagement, v) an environment that favoured critical debate rather than judgement or discrimination.

In-depth Interviews: Semi-structured, in-depth interviews with key stakeholders (emerging farmers in joint venture partnerships, commercial farmers in joint venture partnerships and governance/institutional actors) were conducted. The interview data was treated as perspective rather than fact, as interview outcomes are often subjective and characterised by bias, poor recall and inaccurate representation (Yin, 2009; Clifford-Holmes, 2015). A minimum of 20 in-depth interviews per case study were conducted.

Questionnaire Survey: A questionnaire was developed based on knowledge of farmers and irrigation practices in the schemes. The survey questionnaire consisted of both open and closed-ended questions for qualitative and quantitative analysis. For closed-ended questions, respondents were allowed to add to existing categories. Questions were formulated in sections covering: agricultural management practices, farmers' perceptions on water allocation reform initiatives, demographic information, household composition, land tenure, cropping system, production costs, crop calendar, livestock description, finances, and scheme management. Participants were given the opportunity to express comments regarding water allocation reforms. Surveys were administered using the ODK collect open-source app.

1.4.2 Sampling strategy and farmer selection

A purposive sampling technique (Dariusz, 2015) was used to select resource poor farmers who have been part of the water allocation initiatives in the irrigation schemes. Emerging farmers willing to participate in the study were identified and contacted. Contacted farmers were then asked to identify other farmers willing to participate in the survey. For quality assurance, the questionnaire was pre-tested in a focus group discussion with smaller groups of farmers from separate irrigation systems. Feedback from the focus group discussions were incorporated to improve unclear, misleading or confusing wording in the questionnaire.

1.4.3 Data Analysis

A thematic analysis approach was employed for the data analysis (Braun & Clarke, 2006; Creswell et al., 2007). Thematic analysis allows the coding of patterns and the establishment of a framework for presenting hidden meaning within the data. The questions were developed to get insights into the challenges faced by resource poor farmers in irrigation management and crop production. Thematic analysis is a technique for classifying recurrent and emerging themes and establishing a framework for presenting the meaning of collected data. The method is flexible and can be modified according to the needs of the study. The method can also be used for both explorative and deductive studies. Thematic analysis was chosen because the method can be used to produce an insightful analysis that answers the

research questions based on the data collected from key informants. The data were compiled in Microsoft Excel 2016 and each question and response was coded, grouped, and ranked. The thematic analysis method used in this study was based on the 6-step framework for thematic analysis developed by Braun and Clarke (2006). The methods employed to achieve each objective are outlined in Table 1.

Table 1. Methodological approaches employed to address each project objective and corresponding report chapters

Objective	Methods Employed	Relevant Chapter
Objective 1: **To examine the disparity between relevant policy intents and implementation on equity goals via joint ventures within the context of water allocation reforms (WAR) in the Lower Sundays River and Great Fish River Catchments.**	Document analysis/desktop study of 18 policy documents using an 8-component equity analysis framework	Chapter 3
Objective 2: **To analyse the enablers and/or barriers to the benefits intended for emerging farmers via joint ventures. Such benefits may include social, economic, livelihoods and technical know-how.**	In-depth interviews (34 participants), surveys using ODK collect app, sustainable livelihoods framework analysis, and thematic analysis	Chapter 4
Objective 3: **To analyze the governance dimensions, and the suitability of joint ventures for realizing equity, efficiency, and sustainability imperatives in the context of water allocation reforms within the Lower Sundays River and Great Fish River Catchments.**	Analysis of governance modes (hierarchical, market, network, hybrid) using interview data and literature review, data synthesis with policy and livelihoods analysis	Chapter 5
Objective 4: **To explore governance and institutional measures/arrangements/systems, including polycentricity, necessary to support emerging/resource poor farmers at the farm scale to achieve the imperative of equity.**	Analysis of governance modes using interview data, literature review on polycentricity and governance theory, synthesis and recommendations based on existing frameworks	Chapter 5

1.5 REPORT STRUCTURE

This report is structured to systematically address the project objectives through distinct but interconnected chapters (Table 2). Following this introductory chapter, Chapter 2 provides a comprehensive description of the study areas in the Lower Sundays River and Great Fish River catchments. Chapters 3, 4, and 5 present the findings related to policy analysis, sustainable livelihoods analysis, and institutional and governance mechanisms, respectively. Chapter 6 synthesises the findings and presents the conclusions and recommendations.

Table 2. Overview of the Report structure showing chapter objectives and methodological approaches

Chapter	Title	Objective	Methods
CH 1	INTRODUCTION AND BACKGROUND	Research context and problem statement; Joint ventures in water allocation reform; Study objectives and scope	Literature review; Policy context analysis; Conceptual framework development
CH 2	STUDY AREA AND STAKEHOLDER ENGAGEMENT	Lower Sundays River Catchment description; Great Fish River Catchment description; Stakeholder landscape mapping	Site visits and field reconnaissance; Stakeholder identification and mapping; Contextual analysis
CH 3	POLICY ANALYSIS	Policy intents for equity goals; Implementation gaps analysis; Equity framework application	Document analysis (18 policy documents); 8-component equity analysis framework; Policy review and assessment
CH 4	SUSTAINABLE LIVELIHOODS ANALYSIS	Benefits accrued by emerging farmers; Barriers to JV success; Capital assets analysis	34 in-depth interviews; Sustainable livelihoods framework; Thematic analysis

CH 5	GOVERNANCE AND INSTITUTIONAL ANALYSIS	Governance dimensions of JVs; Institutional measures for farmer support; Polycentricity and governance modes	Interview data analysis; Governance modes literature review; Cross-case synthesis
CH 6	CONCLUSIONS AND RECOMMENDATIONS	Synthesis of findings across chapters; Governance pathways development; Policy and practice recommendations	Cross-chapter data synthesis; Integrative analysis; Recommendation formulation

2 STUDY AREA AND STAKEHOLDER ENGAGEMENT

2.1 INTRODUCTION

This research was conducted in two catchment areas in the Eastern Cape Province, South Africa: the Lower Sundays River Catchment and the Great Fish River Catchment. In order to facilitate the co-creation of knowledge as envisioned in the initial project design, there was a need to first establish relationships with relevant stakeholders and key informants. A series of initial site visits and workshops were undertaken by the project research team to introduce the project, familiarise themselves with the different actors, and to obtain the necessary gatekeeper permissions to proceed with project activities. This chapter serves to present the details of these site visits and provide a rich contextual overview of the case study areas. The study employed an engaged approach combining desktop research, stakeholder workshops, field visits, and survey data collection to develop a comprehensive understanding of the study areas and build relationships with local communities. We structure this chapter by providing study area descriptions outlining the geographic location and climate, geology and soils, water infrastructure, economic activities and water allocation in each study area. We then outline our stakeholder engagement approach, resulting in a set of site visits followed by a narrative account of these site visits to both catchments.

2.2 STUDY AREA DESCRIPTIONS

We first present a high-level summary and comparison of the two study areas (Table 3) followed by a more detailed narrative description of the different study area characteristics for each area.

Table 3. Comparative Overview of the two study areas, Lower Sundays River catchment and Great Fish River catchment (Tyhefu Irrigation Scheme).

Characteristic	Lower Sundays River Catchment	Great Fish River Catchment (Tyhefu Irrigation Scheme)
Geographic Location	Mzimvubu to Tsitsikamma WMA7, 80km northeast of Nelson Mandela Bay Municipality, within Sundays River Valley Municipality	35km east of Makhanda, north bank of the lower Fish River, Eastern Cape Province
Climate	Rainfall: 400mm (coast) to 1,100mm (mountains); Temperature: 5°C min (July) to 30°C max (January); Evaporation: 1,750mm annually	Rainfall: 475mm (40% coefficient of variation); Temperature: 9°C min (July) to 28°C max (December-February); Evaporation: 2,100mm annually
Geology and Soils	Witteburg Series (Cape SuperGroup), Uitenhage Group sedimentary rocks; Dundee, Oakleaf and Valsrivier soil forms on alluvial/colluvial sediments	Beaufort Group sedimentary rocks (sandstone, shale, mudstone); Misphah, Williamson and Swartland soil types - shallow and highly erodible
Water Infrastructure	Orange-Fish-Sundays Transfer Scheme from Gariep Dam via 19km canal, 13km Cookhouse tunnel, 26km Schoenmakers Canal system	Orange River bulk pipeline system (Fish River water unsuitable due to high salinity and sedimentation)
Economic Activities	Commercial citrus farming (navel, Valencia oranges, lemons), lucerne, potato production; limited livestock and game farming	Smallholder irrigation scheme; pomegranate production (commercial units), household food plots, limited livestock production
Population and Settlement	SRVM population: 68,100 (2021 projection); main towns: Kirkwood and Addo; high unemployment, social grant dependence	Five settlements/villages along 25km river stretch: Ndlambe, Pikoli, Kaliken, Ndwayana, Glenmore; densely populated, originally 1,678 farmers on 641 ha

Water Allocation	90% allocated to commercial farmers, 4% to Sundays River Valley Municipality for domestic/industrial use	Scheme-based allocation to smallholder farmers; bulk supply managed through irrigation management transfer
Key Challenges	Historical water allocation inequities, unemployment, dependence on inter-basin transfers, climate variability	Described as most eroded area of former Ciskei; poor agroecology, advanced soil erosion, scheme closure/rehabilitation cycles, drought-prone conditions

2.2.1 Lower Sundays River Catchment

2.2.1.1 Geographic Location and Climate

The Lower Sundays River Catchment is situated within the Mzimvubu to Tsitsikamma Water Management Area (WMA7), approximately 80km northeast of the Nelson Mandela Bay Municipality (Figure 1). Located within the Sundays River Valley Municipality (SRVM), the area experiences significant rainfall variation due to topography, ranging from over 1,100mm annually in mountainous regions to 400mm near the coast. Mean temperatures range from 5°C minimum in July to 30°C maximum in January, with mean annual A-pan evaporation of approximately 1,750mm.

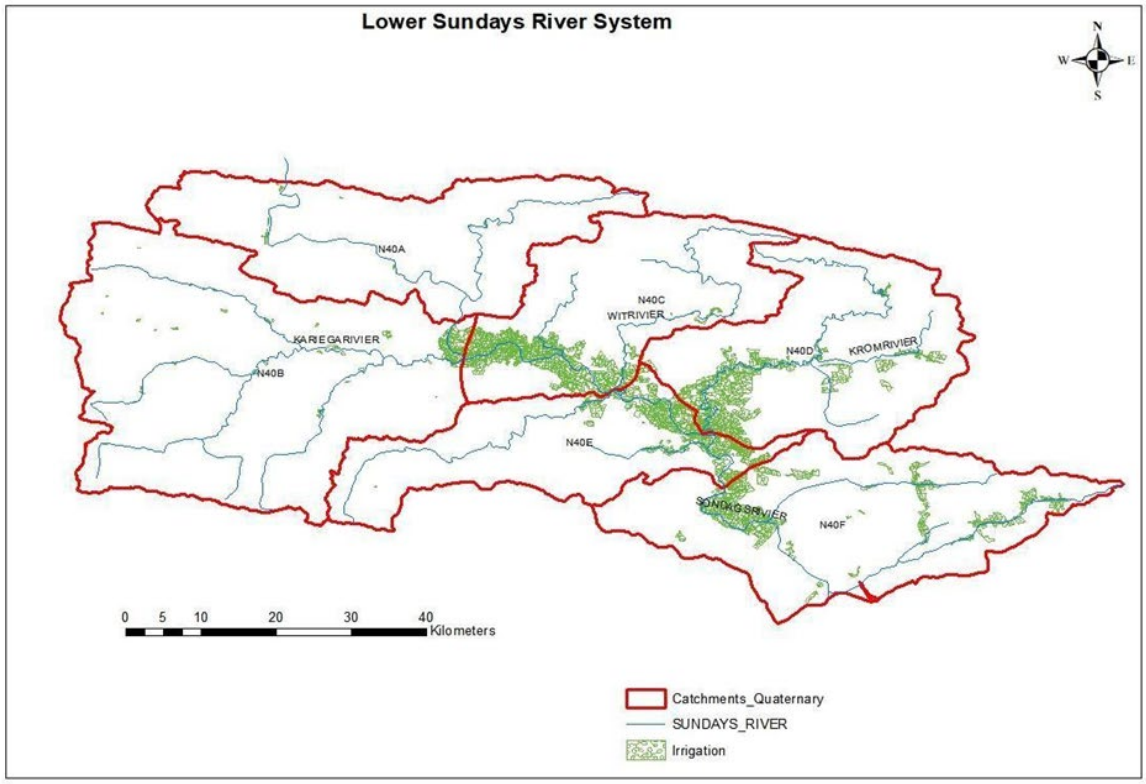

Figure 1: Map of the Lower Sundays River catchment highlighting quaternary boundaries.

2.2.1.2 Geology and Soils

The Witteburg Series of the Cape SuperGroup forms predominant mountainous ridges. The Uitenhage Group, comprising marine and fluvial Cretaceous sedimentary rocks overlies the Cape System. Irrigated soils are developed on alluvial and colluvial sediments, with dominant soil forms being Dundee, Oakleaf and Valsrivier.

2.2.1.3 Water Infrastructure

The area is supplied by the Orange-Fish-Sundays (OFS) Transfer Scheme, constructed in the 1970s. Water is conveyed from Gariep Dam via tunnels, canals and rivers to Darlington Dam, then diverted at Korhaansdrift into the Lower Sundays Government Water Scheme. This system supplies both agricultural and domestic water needs.

2.2.1.4 Economic Activities

The catchment's economy is dominated by commercial citrus farming (navel and Valencia oranges, lemons), lucerne and potato production. Limited livestock farming (sheep, cattle) and game farming also occur. The SRVM population was projected at 68,100 in 2021, with high unemployment rates and significant dependence on social grants.

2.2.1.5 Water Allocation

Approximately 90% of allocated water serves commercial farmers, whilst only 4% supports the Sundays River Valley Municipality for domestic and industrial uses. This allocation pattern reflects historical inequities that the research addresses.

2.2.2 Tyhefu Irrigation Scheme

2.2.2.1 Geographic Location and Climate

The Tyhefu Irrigation Scheme is located 35km east of Makhanda on the north bank of the lower Fish River (Figure 2). Established in 1983 as one of six major smallholder irrigation schemes in the Eastern Cape during the homeland era, it originally covered 641ha divided among 1,678 farmers. The scheme consists of five settlements: Ndlambe, Pikoli, Kaliken, Ndwayana, and Glenmore, distributed along approximately 25km of the river. Annual rainfall is low at 475mm with high variability (40% coefficient of variation), whilst annual evaporation reaches 2,100mm.

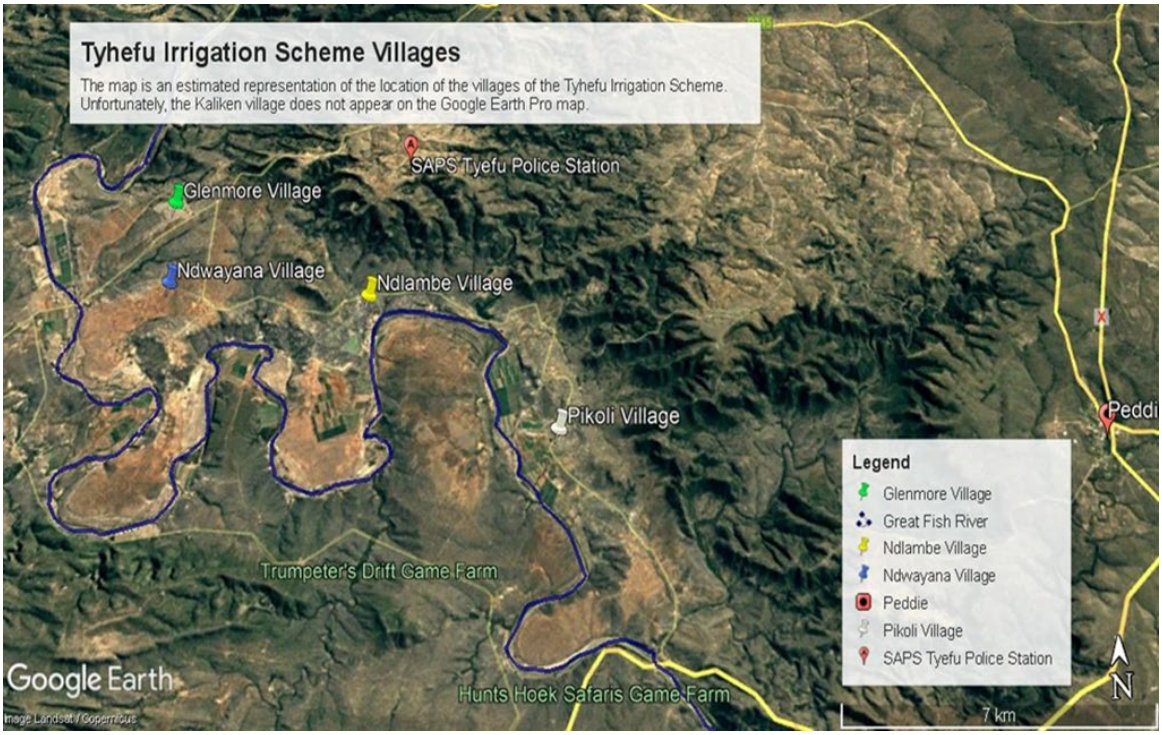

Figure 2: A Google Earth view of the Tyhefu Irrigation Scheme showing the relative position of 4 of the 5 village

2.2.2.2 Environmental Characteristics

The area has been described as one of the most eroded regions of the former Ciskei, with shallow, non-fertile soils, irregular rainfall, advanced soil erosion, and water quality problems. High evaporation rates and seasonal temperature extremes create challenging agricultural conditions. The geology comprises sedimentary rocks (sandstone, shale, mudstone) of the Beaufort groups, producing shallow, highly erodible soils including Misphah, Williamson and Swartland soil types.

2.2.2.3 Water Supply and Infrastructure

Water is supplied via the Orange River bulk pipeline system rather than the Great Fish River, as the river water does not meet agricultural production standards. The scheme has undergone several closures and rehabilitations, lying inactive from 1997 until revival in 2002 under the Irrigation Management Transfer policy.

2.2.2.4 Land Use and Production

Each village operates commercial units and household food plots. In 2013, commercial sections focused on pomegranate production through strategic partnership with Boni-Fruit, a Western Cape company. However, agricultural productivity remains limited by poor agroecology.

2.3 STAKEHOLDER ENGAGEMENT APPROACH

The research adopted a participatory approach that prioritised co-creation of knowledge with local stakeholders as envisioned by the project proposal to achieve the project objectives. In order to facilitate this co-creation of knowledge, there was a need to first establish relationships with relevant stakeholders and key informants. This methodology included:

- Initial site visits and workshops to introduce the project
- Establishing relationships with relevant stakeholders and key informants
- Obtaining gatekeeper permissions from traditional authorities
- Facilitating community discussions and feedback sessions
- Conducting guided field visits to key locations

A series of initial site visits and workshops were undertaken by the project research team to introduce the project, familiarise themselves with the different actors, and to obtain the necessary gatekeeper permissions to proceed with project activities.

2.3.1 Workshop and Field Visit Activities

2.3.1.1 Lower Sundays River Catchment Workshop (11 April 2023)

The first site visit to the Lower Sundays River Catchment took place at the offices of the Lower Sundays River Water User Association (LSRWUA) in Kirkwood to attend a sitting of the Catchment Management Forum (CMF). Previously known as the Sundays River Irrigation Board, the Irrigation Board was obligated to transform to a Water User Association under the National Water Act No. 36 of 1998, promulgated in the Government Gazette on 20 August 2004.

The project team, comprised of Prof Nelson Odume, Dr Fenji Materechera-Mitochi and Mr Simphiwe Ngilana, was invited to make a presentation as part of the CMF programme to introduce the project to stakeholders with interests in water use within the catchment. The CMF meeting was chaired by DWS official Mr Ngilana, who is also part of the project team. Stakeholders included representatives from the Department of Water and Sanitation (DWS), local farmers' associations, the Water User Association and community interest groups such as the Sundays River Valley Collaborative (SRVC).

The project was presented by Dr Materechera-Mitochi using Microsoft PowerPoint, followed by a facilitated discussion led by Prof Odume addressing questions, concerns and points of clarification raised by the audience. The post-presentation discussion brought up issues of concern including: 1) the potentially harmful effects of miscommunication and the need to ensure project aims are clearly explained when engaging with participants 2) the need to clarify which specific farmers the project is targeting 3) realistic expectations of the project timeline 4) the pertinent need for a revolutionary and developmental approach to addressing problems over time.

Forum members expressed the view that other community actors, such as leaders from different religious organisations, ward committee members, leaders from different wards and business owners, should also be regarded as useful contributors to the project. The CEO of the LSRWUA ended the discussion by indicating the association's willingness to participate and assist with any information or databases in their possession. An attendance register was taken for stakeholder engagement records and future networking purposes.

The project team has attended two other scheduled CMF meetings as a recognised stakeholder (25 May 2023 and 28 June 2023). A visiting scholar, Prof Elizabeth Mack from the Geography Department at Michigan State University, accompanied the project team to the CMF meeting on 25 May 2023 and was introduced to forum members as a collaborator in the project team.

2.3.1.2 Guided Site Visit to Key Locations

Following the CMF meeting, the project team embarked on a guided tour of the study area, accompanied by CMF members Mr Theo Bezuidenhout and representatives from the Sundays River Valley Collaborative (SRVC). The tour began at the Sundays River Canal, which is supplied by the Gariep Dam. Water from the Gariep Dam is released into the Orange River through controlled outlets, then diverted into the Sundays River via the Sundays River Canal.

The Sundays River Canal is a man-made channel that branches off from the Orange River and transports water towards the Sundays River Valley (Figure 3). The infrastructure consists of a 19km canal to the 13km Cookhouse tunnel through the Bosberg mountain chain and a further 14km canal to the stepped chute near Somerset East, which discharges into the Little Fish River. About 40km further down the Little Fish the water is picked up at De Mistkraal Weir into the 26km Schoenmakers Canal, which discharges 123 million m³/a into the Schoenmakers River, a tributary of the Sundays River, which feeds into the Darlington Dam.

Figure 3: Sections of the Sundays River Canal showing water conveyance infrastructure

The team was then guided to an entrance gate of a farm that is part of the Ikamva Lethu Trust (Figure 4). Access into the farm premises had not been granted, so Mr Bezuidenhout gave the team a brief about the Trust at the farm gate. The Ikamva Lethu – Xhosa for “our future” – project serves as an example of a joint venture in the Sundays River Valley. The project was first launched in 2016 by the Sundays River Citrus Company (SRCC), which represents about 10% of South Africa's citrus industry and around 45% of the citrus coming from the Sundays River Valley.

The project initially earmarked approximately 700ha of farmland that is part of a 1,200ha tract of farmland purchased and registered by the SRCC (Figure 5). An environmental impact assessment application was submitted to the Department of Environmental Affairs in 2016 and authorisation was granted towards the end of 2017. In 2016, the project was allocated a water licence by the provincial Department of Water and Sanitation, allowing the farm to draw a 675ha equivalent of water from the Sundays River Irrigation Scheme for citrus irrigation.

Figure 4: The entrance to an Ikamva Lethu farm gate that the project team visited as part of the guided site tour.

Figure 5: A collage of onsite images of one of the successful orchards planted as phase 3 of the Ikamva Lethu Black Economic Empowerment Project.

The SRCC was guided by the National Development Plan (NDP), which suggests that 20% of farming enterprises be transferred to farm workers, with the farmer or landowner retaining ownership of half of the shares (10%). Ikamva Lethu was envisioned to be a broad-based project focused on inclusivity and participation that would possibly result in 400 community members becoming shareholders and beneficiaries. With regard to shareholding, the original plan was that the SRCC would have a 5.5% shareholding, 60% of the shares belonging to permanently employed previously disadvantaged farm workers living and working on farms in the valley, and the remaining 34.5% of shares held by participating citrus growers.

The project has been rolled out as a five-phase project. The first phase included laying infrastructure and building dams, cultivating the first 150ha of orchards and planting about 75,000 trees, which took roughly 18 months. The first fruits of the project were borne in the 2022 harvest season. As the project unfolds, citrus varieties to be planted are determined by market demand and could also include juice processing opportunities. SRCC now has three farming enterprises, excluding Ikamva Lethu, which are owned by workers' trusts—Luthando Farm, Mbuyiselo Farm and Sundays River Farming Trust—all of which serve as examples of JVs aimed at transformation and redress.

2.3.1.3 Great Fish River Catchment Workshop (12 April 2023)

The first site visit to the Great Fish River (Tyhefu) Catchment took place at the office of the Ndlambe tribal authority, where Chief Makinana resides. A meeting was held between the chief, tribal council members, the project team, comprising Prof Odume, Dr Materechera-Mitochi and Mr Ngilana, stakeholders from the Department of Rural Development, Agriculture and Land Reform (DRDLR), extension workers, and representatives from the National Development Agency (Figure 6). All meeting members had varied interests in water-related issues within the catchment area.

The chief welcomed all members in attendance and the agenda for the programme was presented. A presentation of the current project by the project team was included in the agenda. The presentation was

printed and distributed to meeting members for ease of reference in the absence of a projector. Dr Materechera-Mitochi delivered the presentation with the aid of Mr Ngilana, who interpreted into the local language, isiXhosa. The presentation was proceeded by a facilitated discussion, whereby meeting members were given the opportunity to give their feedback on the presentation and express their opinions. Key outcomes from this engagement included are outlined below.

Chief Makinana indicated that the project team was welcome in the area and verbally provided his authorization for the study to be conducted in the area. The Chief indicated that he would be willing to sign a gatekeeper permission letter if it were presented to him. The Chief also gave the project team his permission to drive through the farm areas to make observations.

Feedback from the council members in attendance highlighted the importance of clearly communicating to participants that the project team does not have implementation powers so as to manage community expectations. It was also stressed that community members need to be made explicitly aware of what the intended objectives of the project are, as projects in the past have failed to do so, creating a level of mistrust for outsider interventions in the area. Council members also expressed their desire to have project findings communicated to them in a manner that will be easy to understand.

The extension officers in attendance contributed to the discussion by indicating how public-private partnerships have already been explored in the catchment area, and the project team should consider collaboration with relevant stakeholders in this regard. The project team was informed of examples of such partnerships, such as an upcoming visit from engineers from the University of Fort Hare on 14 April 2023, who would be coming to test the water and soil in the agricultural land. Meeting members also informed the project team of a large-scale social development programme already underway in the area aimed at revitalising farms under the irrigation scheme, which presents an additional opportunity for partnership.

The DRDLR officials in attendance explained, as a way of providing historical context, that the Tyhefu irrigation scheme was fully functional prior to 1994; however, the water has currently been declared “unsafe” for irrigation with high levels of salinity and sedimentation, resulting in the need to now source water from the Orange River. This presents an area for further background research. As a final contribution to the post-presentation discussion, the DRDLR was presented as a willing collaborator in the project, offering their assistance in whatever capacity.

Figure 6: The Ndlambe tribal council meeting held on 12 April 2023, chaired by Chief Makinana (left). The project team facilitating a discussion with stakeholders at the meeting (right).

2.4 CHAPTER SUMMARY

The study areas represent contrasting agricultural contexts within the Eastern Cape. The Lower Sundays River Catchment showcases commercial citrus production with established water infrastructure, whilst the Tyhefu Irrigation Scheme showcases smallholder farming challenges in a rural, traditional authority-governed environment. The engaged research approach facilitated relationship-building with diverse stakeholders and generated comprehensive baseline data through workshops, meetings and field visits. These activities established the foundation for understanding joint venture arrangements and water allocation reform impacts in both catchments as well as proved important for building relationships of trust and general support for the project.

The following three chapters serve as the substantive chapters of the project, each addressing one of the main objectives of the study (Table 2). Chapter 3 examines the disparity between relevant policy intents and implementation on equity goals via joint ventures within the context of water allocation reforms (WAR) in the Lower Sundays River and Great Fish River Catchments.

3 An Analysis of the Equity Intent of Policies at the Land, Water, and Agricultural Nexus in South Africa

3.1 INTRODUCTION

Equity is a foundational value that affects development in any country setting, as inequity has been a proven cause of slower growth. Inequity impacts a country's political economy by preventing some economic agents from fully expressing their economic potential, which resultantly reduces economic efficiency, delays growth and creates inequality of outcomes (Bourguignon & Dessus, 2009). The need to redress the situation of inequity becomes a priority agenda for any country seeking to accelerate and sustain its development. This is often approached through undertaking equity enhancing policy and applying it to a country's unique setting. A major critique of equity-sensitive policies within the sphere of development is that they often fail to align development goals with existing processes and structures (Hall, 1998). In an idealistic development context, effective institutions are viewed as reliable mechanisms for monitoring and enforcing ideas aimed at addressing inequality, which will therefore fuel economic growth (Levy et al., 2021). Inequity is said to reduce economic efficiency and negatively impact a country's growth through three channels: 1) misallocation of existing resources 2) persistence of inefficient institutions for public decision making and 3) political tension and conflict (Beder, 2000; Bourguignon & Dessus, 2009; Fleurbaey et al., 2014).

In the South African context, the history and legacy of apartheid have significantly contributed to the gross inequities that currently exist in the country and impact economic actors across various sectors important to the country's development. The South African government has used policy as a tool to address inequity at both a strategic and operational level and this is evidenced in the policy frameworks aligned to different government ministries. The government further uses regulations to implement policy imperatives with an equity focus (Levy, et al., 2021). This chapter specifically regards the sectors of land, water and agriculture as they are closely interrelated and therefore jointly contribute to the country's sustainable development. The three sectors are thus considered as a nexus for the purpose of the subsequent discussion. In post-apartheid South Africa, several equity-sensitive land, and water reform policies have been pursued with the intended goal of redressing inequalities (Nhamo et al., 2022).

3.2 BACKGROUND, LITERATURE REVIEW AND EQUITY CONCEPTUALISATION

Misallocation of existing resources is seen in the disparities in land and water for agricultural use. The racial maldistribution of land dates to as early as the Native Land Act of 1913, which resulted in only 10% of land being reserved for black people (Thwala, 2006, as cited in Rosset et al., 2006). This legislation prefaced a long history of large disparities in land ownership amongst different population groups in the country, necessitating land reform as a national objective in the post democracy government (Mukarati et al., 2020). There has been a wide range of land-related policies and programmes since 1994 that have been influenced by this historical context with specific efforts towards land reform that will redistribute land and establish secure land rights for agents whose land tenure is legally insecure. For example, the policy on Land Redistribution for Agricultural Development (LRAD) of 2001 (Wegerif, 2004) sought to increase access to agricultural land for Black people, broadly defined as including South Africans of Indian descent and of mixed-race, contributing to the redistribution of approximately 30% of the country's commercial agricultural land. The implementation of land-reform policies has revealed numerous shortcomings in successfully achieving equity as a goal and has therefore resulted in various policy amendments (Hoeks et al., 2014). Hall (1998) argues that the very way in which policy is construed and

designed may potentially diminish or divert the intended vision of land reform. This level of constructive criticism of equity is often lacking in policy analyses presented in development research and is the contribution that this chapter is premised on.

In the water sector the notion of Water Allocation Reform (WAR) as it pertains to water for productive use within the agricultural sector has been recognized by the DWS as a necessity for a host of reasons which include: 1) the skewed distribution of water allocation in favour of white people, 2) South Africa has nearly reached its full irrigation potential, 3) increased water scarcity due to uneven rainfall distribution patterns and exceedingly high evapotranspiration rates, 4) the ongoing negative impacts of climate change, 5) stressed and overallocated water resources, 6) transboundary water requirements and the challenges brought about by shared water resources amongst others (DWS, 2008; Msibi & Dlamini, 2011).

According to Msibi (2011) the processes for instituting WAR in South Africa have paid particular attention to distributive justice and the National Water Act (NWA) of 1998 provides the legislative framework for WAR informed by the guiding principles of efficiency, sustainability and equity. Some of the policy interventions aimed at WAR have an overt distributive equity focus as can be seen in the Strategic Framework on Water for Sustainable Growth & Development of 2008 which distinctly outlines the targets of WAR as: "to have 30% of allocable water allocated to previously disadvantaged individuals by 2014, at least 50% of which should be in the hands of women" and "to have 60% of allocable water allocated to blacks by 2024" (DWS, 2008). One reasonable critique of this distributive equity focus is that it limits the understanding of equity to only one dimension when the notion of equity is multidimensional. A more robust and nuanced understanding and consideration of equity is necessary to assess whether the existing policies consider the various dimensions of equity required to guide sustainable and equitable water and land reform in South Africa.

Equity relates mainly to fairness in accessing opportunities, influencing decisions, equality in recognition as well as fairness in paying attention to contextual issues that may influence how different people or societal groupings participate in societal matters (Pascual et al., 2014). This commonly accepted framing of equity categorises equity into four dimensions: distributive, recognitional, procedural and contextual (McDermott, 2013), which are further explored in this chapter. Distributive equity implies fairness in the allocation of resources, cost sharing, material benefits and burden sharing, risks, and opportunities allocated among people and societal constituencies (McDermott, 2013; Pascual et al., 2014; Odume et al., 2022; Valipour et al., 2024). In the context of WAR, distributive equity thus concerns itself with the question of fairness regarding equitable sharing of benefits and costs associated with water access, governance and associated decisions (McDermott, 2013). Recognitional equity is concerned with fairness in the way people are regarded and/or treated on the basis of their identity, affiliations, culture or other socially constructed features, e.g., race, ethnicity, nationality, religion, etc. (Odume, et al., 2022). Recognitional equity affirms differences based on identity, etc., and pays attention to unfair treatment and discrimination on the basis of these. Distributive equity concerns itself with the question of fairness regarding equitable sharing of benefits and costs (McDermott, 2013). Procedural equity emphasises fairness in participation in decision-making processes that influence allocation of benefits and costs (Seigerman et al., 2022:283). Procedural equity pays attention to how decisions are made, how people participate in those decision-making processes, and the representation of different social constituencies involved or affected (Odume et al., 2022; Leach et al., 2018). Contextual equity implies the extent to which broader contextual factors (e.g., economic, governance, social structures, climate change, environmental conditions, and rule of law) enable or undermine equity and the advancement of equity in policy and practice (Bennett, 2022).

The complexity of equity imperatives raises four important questions: 1) how is equity construed in the relevant policy documents in the land, water and agricultural sectors? 2) Are the intended equity objectives clearly stated? 3) What policy mechanisms and instruments are in place to achieve, monitor and evaluate progress towards equity imperatives in these sectors? 4) To what extent do the policy documents view the pursuit of equity imperatives as a nexus challenge? This chapter responds to these questions by analysing relevant policy documents related to land, water and agricultural reforms in South Africa. It draws on the conceptual multidimensional framing of equity to develop an analytical rubric, which was then applied to key policy documents.

3.3 METHODOLOGY

3.3.1 Policy analysis approach

To analyse the equity intent of relevant government policies related to the water-land-agriculture nexus, we developed an equity analytical framework (Table 4). The framework was developed by drawing on key equity-related literature (McDermott, 2013; Pascual et al., 2014; Odume et al., 2022) to distil a set of seven components, including the policy objective, equity objective, target, scale, dimension, mechanism and monitoring and evaluation of equity-related outcomes. The equity dimension was further disaggregated into distributive, procedural, recognitional and contextual equity dimensions. Together, these components were formulated into an analytical framework through which to analyse the degree to which equity was considered in a selection of water allocation reform-related policies. To support the application of the framework, each component included definitions and probing questions that guided the process of analysis and promoted consistency across the analysis team.

Table 4. Policy analysis framework for equity assessment.

	Aspects of the analysis	Description and guiding questions
	Policy Objectives	What are the overall objectives of the policy?
Equity Components	**Policy Equity Objective**	What are the equity specific objectives of the policy?
	Equity Target	Who is targeted for equity in the policy (e.g., women, poor farmers, rural farmers, or other historically disadvantaged individuals)? Who qualifies as an equity candidate under this policy, and what justifications are used for their inclusion?
	Scale of Equity	At what scale does the policy aim to achieve equity? In other words, at what level is equity intended to operate according to the policy? This could range from the scale of an individual irrigation scheme to the farm level (local scale), catchment scale (district scale), broader (provincial, national) or multi-scale. Is this clearly defined in the policy?

	Equity Dimensions	What dimensions of equity are evident? How are these dimensions conceptualised/framed? *Distributive equity* refers to how costs, benefits, risks, and burdens are shared among people and social groups due to resource governance, policy, and implementation practices, particularly regarding water in the context of agricultural reform. *Procedural equity* focuses on inclusivity, participation, and representation. It emphasises the fairness of decision-making processes, including how people participate and how different social groups are represented. *Recognitional equity* concerns the respect and acknowledgement of people's identity, culture, and values. It addresses issues of discrimination, oppression, and exclusion based on identity factors such as gender, race, ethnicity, nationality, or religion. *Contextual equity* considers pre-existing social, technical, economic, environmental, political, and historical conditions that can either enable or constrain effective participation in decision-making processes related to water allocation and agricultural reform.
	Equity Mechanisms & Instruments	What mechanisms or instruments does the policy propose to achieve the stated equity goals at the appropriate scale for the target groups? These might include financial instruments such as grants, credits, preferential procurement, or preferential access to markets, as well as capacity development initiatives, training programmes, or institutional reforms.
	Monitoring, Evaluation, & Learning	Does the policy consider monitoring, evaluation and learning (MEL)? If so, how is MEL conceptualised? Specifically, does the policy outline key performance indicators? How are these indicators monitored, who is responsible for monitoring them, and at what intervals?

A total of 11 policy documents were collected for analysis from government departments whose mandates intersect land, water and agriculture (see Table 5).

Why were these documents selected and not others? I agree that this is important to address. I think we reviewed a larger list of policy documents and selected water and agriculture related policies we felt most critical. We also relied on Mr Ngilana's experience and "expert views" within the team to select key policies to analyse. We must emphasise that the list of policies analysed is by no means exhaustive, but serves as a sample analysis to get a sense of the multidimensional consideration of equity in the water-land-agricultural nexus-related policies. As a result, four water sector and seven agricultural sector policies were identified to adequately represent policies related to water allocation and land reform.

From a broader review of policy documents, 11 were selected for analysis based on expert judgement within the research team and assessment of their critical relevance to the water-land-agriculture nexus (see Table 5). The selection process involved identifying policies deemed most significant for water allocation and land reform. Whilst this list is not exhaustive, it provides a representative sample to examine multidimensional equity considerations across the nexus. The final selection comprised four water sector policies and seven agricultural sector policies to adequately represent policy frameworks governing water allocation and land reform.

A first level of deductive analysis was conducted using the framework outlined in Table 4. Relevant policy content for each analytical component was extracted and compiled into a detailed table (Appendix 1). The interpretation of this table is presented in narrative form. Subsequently, sub-categories for the equity components were derived both deductively from the component descriptions and inductively from reviewing the policy data in the detailed table. These equity components and sub-categories were then used to create two high-level overview tables (Tables 6 and 7), which illustrate whether the sub-categories were evident, or not, across the 11 policy documents. For instance, each dimension of equity

(distributional, procedural, recognitional, and contextual equity) can be further unpacked. For example, procedural equity included aspects such as inclusivity, participation, representation, and fairness. Similarly, there are various sub-categories of mechanisms and instruments of equity, including cross-policy initiative alignment and integration, different forms of HDI support, water allocation reform and land reform to name a few.

3.4 RESULTS

3.4.1 Policy analysis

The following section presents the findings of the application of the equity framework to 11 selected policy documents. An overview of the selected policies and their high level objectives are outlined in Table 5. Findings are presented through a series of high-level overview tables and accompanying richer narratives giving detail to the various equity-related elements making up the framework.

Table 5. Summary of key policies analysed and their overarching objectives.

#	Policy	Objective
1	Land Redistribution for Agricultural Development (LRAD); 2001; Agric	Sub-programme of Land Redistribution. Transfers 30% of agricultural land over 15 years to targeted individuals/groups. Improves access to municipal/tribal grazing land. Assists disadvantaged individuals to acquire land/agricultural implements, improve nutrition/incomes, expand opportunities for women/youth, and decongest former homelands with agricultural grants.
2	Financial Assistance Policy for Resource-Poor Irrigation Farmers; 2004; Agric	Advances access to irrigated agriculture and sustainable irrigation for resource-poor farmers. Provides financial/capacity assistance (grants/subsidies). Support includes Government Water Schemes (GWS), ex-homeland GWS, water user association (WUA) schemes, or other approved entities.
3	Proactive Land Acquisition Strategy (PLAS); 2006; Agric	Implemented after failures of Settlement Land Acquisition Grant (SLAG) and Land Redistribution for Agricultural Development (LRAD) to accelerate land redistribution. Uses supply-driven "willing buyer, willing seller" model. Ensures redistributed land is used productively, supports food security, economic growth, and sustainable rural livelihoods.
4	Policy Framework for the Recapitalisation and Development Programme of the Department of Rural Development and Land Reform; 2011; Agric	Develops/provides strategic support to farmers/cooperatives. Aims to "graduate" small-scale black farmers into commercial farmers and improve food security.
5	Policy for Land Development Support (LDS) of the Department of Rural Development and Land Reform, 2018; Agric	Farm assessments conducted on PLAS-acquired farms to identify support needs for sustainable production and commercial viability. LDS: Implemented to provide comprehensive technical/financial support to land reform farms, addressing gaps identified in assessments.
6	Land Donations Policy; 2020; Agric	Land Reform prioritised but challenged/delayed. Land Donations Policy: Introduced to fast track efforts and address historical inequalities. Encourages landowners to donate land for redistribution to disadvantaged individuals/communities. Donated land intended for agriculture, settlement, and development to promote economic empowerment and social justice.
7	National Policy on Comprehensive Producer Development Support; 2024; Agric	Responding to Agric challenges, including climate change, water scarcity, limited access to finance/markets, land reform issues, pests/diseases, the policy promotes regulated/guided assistance services to producers, bridging support from government and private sector nationally.

8	National Water Act; 1998; Water	Legislative framework governing water resources for sustainable and equitable use. It aims to protect, use, develop, conserve, manage, and control water resources in ways that take into account the needs of all users, the environment, and future generations.
9	Water Allocation Reform Strategy (WARS); 2008; Water	"Equity" principle of NWA less prioritised than "efficiency" and "sustainability", preserving the status quo. WARS bridges policy and implementation, targeting the realisation of NWA goals and addressing past inequalities.
10	National Water and Sanitation Master Plan; 2018; Water	Implementation plan for the NWRS3 and NWA. Outlines short- to long-term critical priorities (2018 – 2030) to safeguard water security and equitable access to water and sanitation services for all in South Africa. Priorities divided into two sections i) Water and Sanitation Management and ii) Enabling Environment.
11	National Water Resource Strategy 3rd Edition; 2023; Water	Strategy underpinned by NWA and effected through the NWS Master Plan. Outlines South Africa's water resource management strategy for sustainable and equitable protection, use, development, and management of water resources. It highlights the Department of Water and Sanitation's role as custodian of water resource management for a sustainable, equitable sector.

Table 6. High-level overview of the consideration of various elements related to equity objectives, equity targets and the scale of equity in key selected policies and legislation analysed (explicit consideration denoted with an "X"; no evidence of consideration left blank).

3.4.1.1 Equity objectives

An overview of Table 6 reveals some trends in the type of equity objectives presented in each of the policies analysed. All the policies contained equity objectives to achieve redistributive, transformative, or redress objectives. Nine of the policies also contained equity objectives for social development/empowerment/capacity building/employment. The only two policies that did not have such an equity objective were the National Water Act of No. 36 of 1998 and the National Water and Sanitation Master Plan (2018), where, particularly in the case of the latter, focus on high-level institutional capacity building rather than on the scale of individual HDIs. None of the water, but all of the agricultural policies analysed had varying degrees of focus on either agricultural productivity, producer financial sustainability and/or sustainable livelihoods. Only one policy, the National Policy on Comprehensive Producer Development Support, contained an equity objective directed at regulations to enhance financial support. The primary objective of this policy was to regulate and guide the provision of support measures to the various categories of producers, thereby contributing to the restoration of the natural resources and a sustainable and competitive agricultural sector. Interestingly, none of the policies analysed contained equity objectives directed at enhancing market access and partnerships. This is unexpected since equity objectives directed at agricultural productivity would pair well with enhanced market access so that producers have improved capacity to sell more products that are a result of improved productivity.

Sustainable water development, supply and use are featured as an equity objective in all water policies, but only in two agricultural policies. Here, the emphasis was on enhancing "sustainable irrigation development for resource-poor farmers" (Financial Assistance Policy for Resource Poor Farmers) and "contributing to the sustainable restoration of natural resources" (National Policy on Comprehensive Producer Development Support). Only one policy analysed included a regulation for financial support in its equity objectives. No policies had explicit equity objectives related to market access and partnerships.

3.4.1.2 Equity targets

The majority of policies (8) analysed are explicit in targeting historically disadvantaged individuals (HDIs), specifying Africans, Coloureds and Indians. Some (5) go further to specify which HDIs are to be targeted, including youth and vulnerable groups (women and persons with disabilities) and the justification is that these are the groups that need support the most to participate in the agriculture value chain. Apart from the Proactive Land Acquisition Strategy, all agricultural policies analysed specified various types of resource-poor farmers as equity targets. For example, the Policy for Land Development Support targets emerging farmers and land reform beneficiaries. However, discussion on how inclusion might be achieved, or what inclusion might even mean, is limited in the relevant policy documents, suggesting the need for a more comprehensive framing of inclusion.

3.4.1.3 Equity scale

Most of the policies (8) are positioned at multiple scales, i.e., national, provincial and district (this includes district and local municipalities). There are a select number of policies that are distinctly specified in the description of the scale at which they are to be applied e.g., the Policy Framework for the Recapitalisation and Development Programme applies to a local scale specifying municipal commonages, irrigation schemes, communal farms and land reform farms and the National Water Resource Strategy 3 focuses primarily at a national scale with consideration of international agreements.

Table 7. High-level overview of the consideration of various elements related to equity dimensions, equity mechanisms and equity-related monitoring, evaluation and learning in key selected policies and legislation analysed (explicit consideration denoted with an "X"; no evidence of consideration left blank).

3.4.1.4 Equity dimensions

Table 7 indicates that many (7) of the policies analysed consider at least three dimensions of equity, while four consider all dimensions of equity. Distributive equity is the most common of the four types; all

but one (the Policy for Land Development Support) have distributive dimensions, whether that is in terms of sharing of costs and burdens or achieving a better distribution of benefits. One example of a policy with a clear distributive orientation to the equity objectives is the Financial Assistance Policy for Resource-Poor Farmers. Specifically, the objectives that indicate improved access to irrigated agriculture and finance are distributive in nature. Another example of an objective with a clear distributive orientation to the objectives is the policy for Land Redistribution for Agricultural Development, which states the following:

"Increase access to agricultural land by black people (Africans, Coloureds, and Indians) and to contribute to the redistribution of approximately 30% of the country's commercial agricultural land (i.e. formerly 'white commercial farmland') over the duration of the programme."

Eight of eleven policies contain some sort of procedural equity component. Many of these policies allude to the intention of enabling participation, but nothing much is said further on what participation might mean, and how this might be achieved. For example, the National Water Resource Strategy of 2023 refers to the creation of effective water institutions but provides no additional information about how this will be implemented. Other aspects of procedural equity (e.g., inclusivity, representation, process fairness & power) are not as prevalent in the policies analysed, with some exceptions. The Land Redistribution for Agricultural Development Policy (LRAD) supports inclusivity, representation and process fairness elements of procedural equity by "...provid[ing] for the formal processes and institutional arrangements through which donations are to be managed" and will "... and institutional arrangements through which donations are to be managed…". Like the National Water Resources Strategy of 2023, however, further details about how the objectives will be achieved are not provided. The Land Donation Policy refers to government officials and experts facilitating discussions with farm dwellers on donated land to address disputes. There is some acknowledgement of tailoring agricultural support to the varying contexts, conditions and needs of agricultural beneficiaries, e.g., LRAD enables a decentralised, demand-directed approach to implementation, allowing for beneficiaries to define their projects with district-level staff assistance and support, including training and capacity building, a critical enabling mechanism to pair with support. The Implementation Plan for the Proactive Land Acquisition Strategy refers to adopting an "area-based approach" that allows for service agreements with local agencies to implement the strategy, which opens the potential for but does not ensure procedural equity. Although at a strategic objective and principle level, relying on other policies to effect these equity intents, the National Water Resource Strategy Three (NWRS3) also considers all sub-elements of procedural equity,

"To be fair, reasonable and consistent in providing access to water use (Strategic Objective 3 p79)… Participation of stakeholders at all levels must be carefully balanced and integrated so as to ensure impoverished rural subsistence farmers, local NGOs, civil society groups and marginalised and disempowered communities are also included (Guiding Principles, p126)."

The LRAD and NWRS 3 policies infer consideration of process fairness through words such as "carefully balanced and integrated," there is little to no consideration of managing power dynamics to promote procedural equity.

All but four of the policies contain a recognitional element. Most (7) of the policies with this element recognise historical inequities related to identity, which we defined as related to whether that is race, gender, ethnicity, nationality or religion. Of these only race, gender and nationality are considered with no explicit acknowledgement of the importance of inequality due to differences in ethnicity or religion. Only one of the policies recognizes historical inequities related to cultural identity (the National Water

Resource Strategy Third Edition in reference to its definition of development) and none of the policies contain language acknowledging inequities related to values.

All but two of the policies (the Proactive Land Acquisition Strategy (PLAS) and the National Policy on Comprehensive Producer Development Support) contain some element related to contextual equity through acknowledgement of pre-existing historical barriers to equity. This is particularly evident in policies seeking to redress land dispossession and alienation as a result of Apartheid, e.g., the Policy for Land Development Support. However, there is little nuance evident in the policies of how different contextual realities may hinder stakeholder inclusion in decision-making and benefiting from policy implementation. An exception is the Land Redistribution for Agricultural Development Policy (LRAD), which policy recognises the overcrowding in former homeland areas and the lack of opportunities in rural areas. By offering various types of projects, from subsistence farming to commercial agriculture, the policy addresses the varied contextual realities of potential beneficiaries.

3.4.1.5 Equity mechanisms

The policies outline a diverse range of mechanisms or instruments to achieve their stated equity objectives. Some policies, such as the NWA, W&SMP and NWRS3, serve as high-level plans or strategies that, together and through other more specific initiatives, address stated equity objectives. Similarly, nearly half of the policies mention a supporting legal framework as a mechanism of its successful implementation but only four explicitly aim for cross-policy and cross-initiative alignment and integration, an approach that counteracts duplication of effort and siloed implementation. Both the NW&SMP and the NWRS3 make provision for amending existing legislation to, among other outcomes, promote equity.

Creating effective institutions features in both high-level agricultural and water policies (e.g., National Policy on Comprehensive Producer Support, NWRS3 and NW&SMP); however only the NWRS3 and NW&SMP make specific provision for building capacity to enable and maintain effective institutional function. Both elements are critical to enable decentralisation and avenues for participation for more equitable beneficiation from policies.

Direct mechanisms to support equity candidates range from water allocation reform initiatives (including ringfenced HDI allocations), land reform (through allocation, donation and redistribution), financial support (subsidies, grants and credit guarantees) and productivity support (infrastructure, equipment and agricultural supplies). Indirect mechanisms to strengthen equity candidate productivity are in some policies also considered as a means to support direct mechanisms. These include market access and strategic partnerships (e.g., through joint ventures as outlined in the Water Allocation Reform Strategy, Land Development Support policy, the Policy Framework for the Recapitalisation and Development Programme of the Department of Rural Development and Land Reform.), advisory services (agricultural extension), capacity development through HDI training and mentorship and in one policy, access to legal and regulatory support. Capacity development paired with more direct equity support mechanisms only features in three of the agricultural policies. Without clear and intentional cross-policy integration to direct capacity development investment through some policies, such as the Financial Assistance Policy for Resource Poor Farmers, may be wasted. To promote the efficient and just distribution of support (particularly financial and material support), three agricultural policies guide how support mechanisms are to be allocated and implemented.

3.4.1.6 Monitoring, evaluation and learning

Many of the policies do not have clear monitoring and evaluation strategies (e.g., Water Allocation Reform Strategy; Financial Assistance Policy for Resource-poor farmers; Policy Framework for the Recapitalisation and Development Programme of the Department of Rural Development and Land Reform) or if they do, there are no clear equity priorities (e.g., the National Water Resource Strategy 2023) or, there are clear gaps in the strategy and room for improvement (e.g., the Land Redistribution for Agricultural Development).

Some policies delegate monitoring and evaluation (M&E) responsibilities to specific departments. For example, the National Water and Sanitation Master Plan delegates M&E responsibilities to the Department of Water and Sanitation (DWS). In the Food Production Policy, M&E responsibilities are delegated to the Food Security Directorate and District Directors. A few of the policies reviewed had specific and targeted M&E strategies. The Policy for Land Development Support of the Department of Rural Development and Land Reform requires participating farmers to submit monthly progress reports.

What is particularly lacking in many of the policy documents is a framework for monitoring and evaluation. Clearer quantitative and qualitative targets, which may enhance precision in monitoring progress towards equity goals, are needed. Regular reporting, which may improve transparency and accountability in equity achievements, is particularly critical if equity imperatives are to be realised. Equally important is participatory channels for soliciting beneficiary or community feedback on achieving equity goals.

3.5 CONCLUSION

The detailed policy analysis suggests that many of the policies in the land-water-agriculture sector have equity imperatives. While equity imperatives are, in many instances, broadly defined, the analysis indicates that, in many instances, there is a lack of focused equity targets and clarity on equity dimensions. However, in many of the policies, there is a strong emphasis on distributive equity but little emphasis on other equity dimensions (procedural, recognitional and contextual equity). Regarding procedural equity, many of the policies allude to the intention of enabling participation but do not go further to indicate what participation might mean, and how this might be achieved.

Regarding equity targets, or equity candidates, many of the policies were quite specific, although some were generic in terms of who or what qualifies as an equity candidate. Generally, many of the policies had women, youth, and previously disadvantaged farmers as their equity candidates, and the justification is that these are the groups that need the most support to participate in the agriculture value chain.

Of particular importance is the emphasis on inclusion, particularly of emerging farmers. However, discussion on how inclusion might be achieved, or what inclusion might even mean, is limited in the relevant policy documents, suggesting the need for a more comprehensive framing of inclusion.

What is particularly lacking in many of the policy documents is a framework for monitoring and evaluation. Clearer quantitative and qualitative targets, which may enhance precision in monitoring progress towards equity goals, are needed. Regular reporting, which may improve transparency and accountability in equity achievements, is particularly critical if equity imperatives are to be realised. Equally important are participatory channels for soliciting beneficiary or community feedback on achieving equity goals.

In summary, the analysis reveals a significant gap between the equity goals articulated in policies and the actual implementation outcomes in joint ventures and water allocation reform. Whilst policies express noble intentions regarding equity, efficiency, and sustainability, the practical implementation falls short due to inadequate monitoring and evaluation frameworks, unclear equity targets, insufficient institutional support, and misaligned governance arrangements. This disparity highlights the need for more comprehensive governance and institutional measures to bridge the gap between policy intent and implementation outcomes in the water-land-agricultural nexus.

In Chapter 4 we examine the social, economic and livelihood benefits emerging farmers have derived from water allocation reform processes, analysing their lived experiences within joint venture arrangements.

4 The social, economic and livelihood benefits derived from water allocation reform

4.1 INTRODUCTION

The South African agricultural landscape has been profoundly impacted by the legacy of apartheid, evidenced by widespread inequities in all aspects of the sector. There is a skewed distribution of land and water resources that favours a white minority over a black majority, and this has various implications for the agricultural value chain. These inequities have, as a result, put equity at the forefront of most governance and institutional arrangements within the sector. The South African government has used policy as a tool to address inequity at both a strategic and operational level, and this is evidenced in the policy and regulatory frameworks aligned with respective government sectors, as can be seen in Water Allocation Reform (WAR) policies and arrangements alongside those related to land reform. Resource poor/emerging farmers are characterised by low-input, labour-intensive forms of production as a key source of livelihood support (Hall, 2004; Mathinya et al., 2022). These farmers are of specific interest in equity focused institutional arrangements due to their historical disadvantage and the fact that they are typically challenged by a myriad of constraints to participation in the agricultural value chain, which mainly stem from the inherent inequality of the sector (Aliber et al., 2010; Aliber & Hall, 2012; Greenberg, 2013). The current study takes on a detailed look into joint ventures as a case study of an equity focused arrangement facilitated by the government, through the arm of the Department of Water and Sanitation (DWS) geared towards improving the agricultural productivity of emerging farmers. Joint ventures (JVs) are regarded as strategic agricultural partnerships in which the government facilitates the pairing of an emerging farmer with an established commercial farmer for capital and economic purposes, achieved through WAR (Mayson, 2003).

South Africa possesses several features that make it conducive to pursuing inclusive business models, particularly through strategic partnerships such as joint ventures (JVs) that link historically disadvantaged farmers with established commercial enterprises (Steenkamp et al., 2020). The policy framework governing water allocation creates specific incentives for such partnerships. Concurrently, the NWA (1998) limits the acquisition of new water rights by white commercial farmers whilst allowing them to retain existing entitlements, provided these are validated and verified through the water-use licensing process (Kapangaziwiri et al., 2018). In response to the persistent challenge of balancing equity, efficiency, and sustainability in water allocation, the Department of Water and Sanitation (DWS) implemented the Broad-Based Black Economic Empowerment (B-BBEE) Act as a guiding mechanism for granting new water rights. Under this framework, commercial farmers are required to demonstrate that the benefits derived from additional water allocations are shared with historically disadvantaged individuals (HDIs) (Movik, 2014; Schreiner et al., 2004). However, the BEE partnership policy is employed by commercial citrus growers as one of the strategies for accessing new water licences (Shahid et al., 2024), raising questions about whether these partnerships genuinely advance transformation or primarily serve commercial interests in securing additional water rights.

Government has made concerted efforts to promote JVs as a mechanism for improving emerging farmers' lives through participation in the agricultural economy. An example of these efforts is the DWS promoting the idea that for emerging farmers to develop, they should use agricultural land tenure rights leased from government and the allocation of water rights to initiate JVs. At the same time, the DWS pressured commercial farmers to establish JVs through land-for-water deals, whereby water rights are only granted to commercial applicants if they form partnerships with water allocation beneficiaries (DWS, 2013). One other example is presented by the Department of Rural Development and Land Reform

(DRDLR) that made strategic partners a requirement for the recapitalisation and development programme (RADP), one of the government's most prioritised agricultural support programmes (DALRRD, 2024). Despite these notable efforts, Fraser (2007) argues that "even though the approach is being promoted by the government as a way to protect the viability of the land and ensure the transfer of skills to the beneficiaries, the approach may turn out to be less favourable for the beneficiaries". One of the major critiques of JVs has been that they are informed by colonial and apartheid ideology and philosophy and are always in favour of the established commercial farmers who run their affairs, thus rendering them fundamentally problematic (Ntsholo, 2014). According to Davis (2014) the way JVs are designed in the context of South African land and water allocation reform generally results in: 1) contradictory articulations of the terms of and conditions of access to and ownership of the means of production (influenced by the wide range of interests, motives and expectations involved) 2) uneasy alliances, compromises and contestations amongst different interest groups in an ever-shifting multi-actor landscape; and 3) "a 'detached' version of capital accumulation, with agricultural corporate interests being able to capture most of the benefits of the partnership" (pp vii).

Based on empirical findings from previous studies in the Lower Sundays River catchment around equity in water governance, it has been established that JVs in this area are already showing signs of collapse (Odume et al., 2022). Study findings further reveal that the collapse of the JVs in the Lower Sundays River Catchment may be due to a number of factors including power dynamics, failure in coherent policy implementation, inequitable access to water and related resources, ways in which the JVs are set up, operated and the profits accrued, disputes over the contribution of the partners, and powerful alliances influencing JVs processes and their outcomes. The scant research detailing the aspect of how JVs have contributed to equity imperatives through livelihood security of emerging farmers presents a need for more livelihood focused research that explores this view.

Another popular WAR strategy that is documented in literature is that of the notion of the ‘set asides’. This refers to a mandate of the then Department of Water Affairs under Minister Kadar Asmal to set aside water allocation solely for emerging farmers for irrigation purposes. This mandate resulted in around 5 156ha (rounded off to 5000 ha) being set aside within the Eastern Cape province for emerging farmers strictly for the purpose of irrigation farming. Findings from the Orange River Re-planning Study (ORRS) show that the 5 156 ha was distributed as follows: Cradock 18 ha, Masipatisane 20 ha, KwaNjoli 84 ha, Tyhefu 860 ha, Enon Mission 296 ha, Vaalhoedskraal 188 ha, Barkley Bridge 3000 ha and Addo 690 ha (DWS, 2021). Studies on the set aside water reveal that much of the water allocation has been developed however the social, economic and livelihoods impact on emerging farmers within these locations remains to be investigated (Odume et al., 2022).

One other context for WAR that is of interest in the current study is that of the revitalization of smallholder irrigation schemes. Smallholder irrigation schemes, defined as a multi-farmer irrigation project larger than five hectares (ha) in size, were established in the former homelands or in resource-poor areas by black farmers or agencies assisting their development (van Averbeke, 2008; Fanadzo, et al., 2010). In the 2015 irrigation strategy published by the then Department of Agriculture, Forestry and Fisheries (DAFF), governance and institutional measures necessary to accelerate the profitable participation of emerging/resource poor farmers in small-scale irrigation schemes were highlighted as a top priority challenge that needed urgent research attention (DAFF, 2015). The strategy document and the draft Business Plan on the revitalisation of irrigation schemes (DAFF, 2012) acknowledged that the focus of previous research and departmental interventions had been on technical, infrastructural, and economic aspects of irrigation schemes in relation to the participation of emerging farmers (Fanadzo et al., 2010). However, with the evident failure of technical-infrastructural focused interventions (Muchara et al., 2014),

it is now clear that there is an urgent need to explore the nature of governance and institutional structures and measures necessary to support emerging farmers at the farm scale.

In the previous chapter, we illustrated how policy documents related to equity imperatives framed within the context of the land-water-agriculture nexus posit that the target and goal of equity are important aspects of any equity focused research. The research suggests that how equity candidates and goals are conceptualized and justified in the relevant policy documents and whether the indicators for assessing goals are foreseen or conceptualised in policy, will have a bearing on progress towards equity. Findings showed that in most policy documents, the equity targets are quite broad, with only a limited number that have a more focused equity target such as the Eastern Cape Agricultural Economic Transformation Strategy which focuses on smallholders/subsistence and communal farmers and the Policy for Land Development Support of the Department of Rural Development and Land Reform which targets emerging farmers and land reform beneficiaries. Such policies that have disadvantaged farmers as their equity candidates based on the justification that these farmers need the most support to participate in the agricultural value chain are of particular interest in this research. Several policy documents emphasise inclusion, particularly of emerging farmers, as the equity goal of the policy; however, discussion on how inclusion might be achieved or what inclusion might even mean is not explicit in these policy documents, suggesting a need for a more comprehensive framing of inclusion. This is where the analysis of the current chapter is positioned. We argue that an analysis of the social, economic and livelihood benefits derived from reform initiatives such as water allocation reform, expressed by the intended beneficiaries themselves from their lived experiences, can be useful for informing the governance and institutional arrangements geared towards accelerating equity imperatives.

The current study argues that governance and institutional measures attuned to the local realities and farmers' perceptions and power differentials/dynamics at the farm scale are needed. The focus of this Chapter is to address the critical question: to what extent have these reforms resulted in tangible socio-economic and livelihood benefits for emerging farmers? We consider livelihoods as a way of conceptualising the economic activities poor (or non-poor) people undertake in their totalities (Bebbington, 1999).

Further exploration of the benefits derived from water allocation reform processes and institutional arrangements, such as JVs, in the current study requires evaluation that places the farmers' lived experience of being part of such arrangements at the forefront. This can be achieved by surfacing the perceptions of these reforms and their intended benefits from the emerging farmers themselves. This view is informed by the assertion made by Adato and Meinzen-Dick (2002) that people, whether poor or not, are agents with assets and capabilities who act in pursuit of their own livelihood goals and not mere passive recipients of external aid and government policies. We therefore make use of the sustainable livelihoods (SL) framework to assess the perceived benefits of water allocation reforms from emerging farmers directly involved in JVs by establishing a broad conception of resources considering livelihoods in terms of access to five types of capital assets: human, natural, financial, physical and social. The analysis uses an understanding of these five capitals in viewing interview responses to distil whether emerging farmers in JVs perceive themselves to have benefited from being a part of such arrangements. The SL framework also requires holistic thinking beyond just the different types of capital assets, but also thought around the potential interaction between assets, the vulnerability context of the emerging farmers, the policies, institutions and processes that influence their access to these capitals and livelihood outcomes that result from these interdependencies.

4.2 METHODOLOGY

4.2.1 Data Collection Methods

We conducted semi-structured, in-depth interviews with 34 participants across the two study sites between October 2023 and February 2024 (Table 8). Participants included emerging farmers (in and out of JVs), commercial farmers (in and out of JVs), and key institutional actors across the land–water–agricultural nexus. Participants were identified through policy documents and websites, existing networks, previous project stakeholder lists (e.g., through engagement with members of the local Catchment Management Forum (CMF), and snowball sampling (Etikan et al., 2016). Most interviews were conducted face-to-face, with some conducted online via Zoom when in-person meetings were not possible. Interviews ranged between 50 and 180 min and were recorded with participants' consent. Where interviewees felt more comfortable engaging in their mother tongue, interviews were conducted in isi-Xhosa with translation assistance from a project member. Interviews were transcribed and translated into English where necessary. Ethical approval was obtained from the Rhodes University Human Ethics Committee (approval number: 2023-764-7948).

Table 8. Distribution and type of all interviews conducted

	Catchment Area	**Joint Venture (JV) (Y/N)**	**Interview Type**
Number Interviews	28 Lower Sundays 6 Tyhefu Irrigation Scheme	11 in JVs 23 not in JVs	8 Key informants 3 Commercial farmers 23 Emerging farmers

4.2.2 Sample Selection

Of the 34 interviews, 14 were selected for in-depth analysis (Table 9) based on relevance to our research question: respondents who offered useful insights into the social, economic, and livelihood benefits accrued by emerging farmers in JVs. Most (12 interviews) of the analysis focuses on the Lower Sundays River valley (LSRV), where respondents had a longer history and experience of JV implementation. Two respondents from the Tyhefu Irrigation Scheme provided contributing and contrasting insights from their involvement in the WAR initialisation process in the area. Core interviews, therefore, included emerging farmers with diverse experiences in JVs and key institutional representatives (CEO of the Lower Sundays River Water Users Association, production manager for the Sundays River Citrus Company, and the Tyhefu local traditional authority representative (Chief). One interview constituted a focus group discussion with five emerging farmers, each in separate JVs with the same commercial partner. Two of the farmers classified as being in JVs were former JV participants and were included in the core samples due to their valuable insights into the entry and exit dynamics of JVs. The authors note that the proportion of interviewees between the two geographical areas is unequal, making analytical comparisons difficult; however, the intention of the study is not to provide a comparison, but to present an illustration of JVs in two different contexts as case studies. In this instance, the context of the one study area (Lower Sundays River Valley) is characterized by numerous JVs past and present, and the other is that of an area classified as one of numerous failed irrigation schemes across the country, namely the former Tyhefu Irrigation Scheme. The revitalisation of smallholder irrigation schemes is an example of a government strategy to support emerging farmers (Lahiff & Cousins, 2005).

Table 9. Summary of interviews analysed for analysis of the socio-economic benefits accrued by emerging farmers in JVs.

	Catchment Area	Joint Venture (JV) (Y/N)	Interview Type
Number Interviews	12 Lower Sundays 2 Tyhefu Irrigation Scheme	10 in JVs 1 not in any kind of JV	3 Key informants 9 Emerging farmers in JVs 1 Emerging farmer not in any kind of JV

4.2.3 Data Analysis

We employed an adaptation of the sustainable livelihoods (SL) framework (Bebbington, 1999; Adato & Meinzen-Dick, 2002; Adato et al., 2007; Guo et al., 2022) to analyse the socio-economic benefits accrued by emerging farmers through JV participation (Figure 7). The framework guided deductive thematic analysis (Braun & Clarke, 2006), focusing on five capital assets (human, natural, financial, physical, and social) and resultant livelihood outcomes (including increased income, diversification of livelihoods, reduced vulnerability, and gender and youth empowerment). In adopting the SL framework, we understand the vulnerability context of the case studies to be emerging farmers identified as historically disadvantaged individuals (HDIs), plagued by gross inequities in water and land allocation as a legacy of apartheid. Regarding policies, institutions, and processes, we consider the South African policy landscape within the land–water–agriculture nexus aimed at achieving the goal of equity through institutional arrangements and processes such as WAR as operationalised through mechanisms such as JVs (Figure 7). The focus of our analysis is emerging farmers' access to the five capital assets, specifically those in JVs.

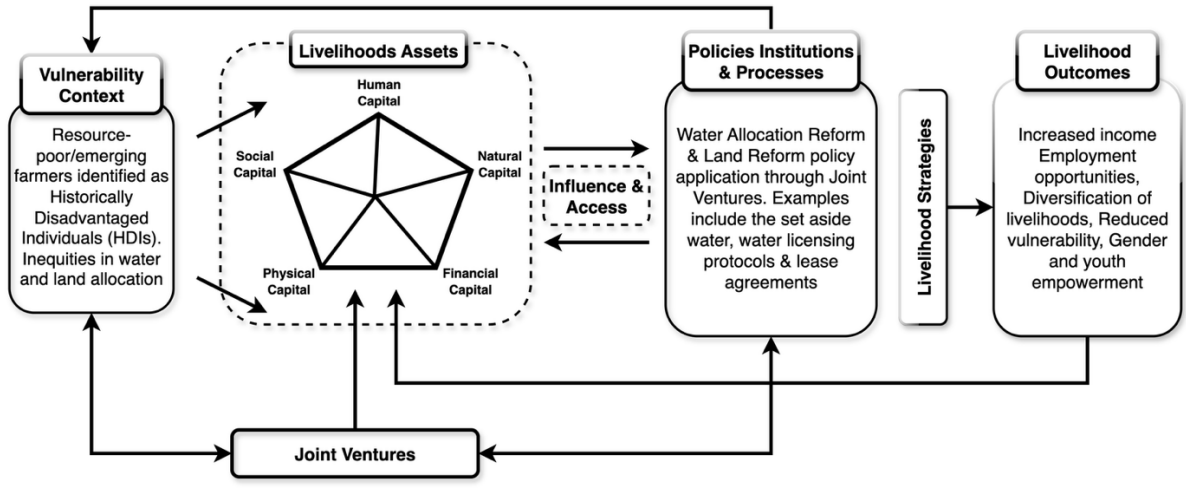

Figure 7: Sustainable livelihoods framework used in the analysis adapted from Majale (2002).

We employed a two-stage analytical process. First, we developed a structured analytical rubric to analyse, code, and extract data related to the five capital assets (Table 10). This deductive thematic analysis (drawing on Clarke & Braun, 2017) involved reviewing interview transcripts for evidence of how

JV partnership experiences affected emerging farmer access to the different capital types. Coded data were organised in Microsoft Excel to facilitate comparative analysis across the dataset and theme identification. While the authors recognise that the sample size may be regarded as exceptionally small, based on the understanding of the value of small samples in interview-based qualitative research (Crouch & Mackenzie, 2006) we believe that qualitative methods are equally rigorous and can therefore provide a valuable contribution to the understanding of the role of capital assets in the success and failure of JVs.

Table 10. Framework for analysing socio-economic benefits accrued by emerging/resource-poor farmers in JVs.

Livelihood asset	Analytical focus
Human capital	Evidence of knowledge, skills, and capacity development through JV participation. Evidence of capacity to operate independently beyond JV arrangement.
Natural capital	Water and land ownership status and resultant changes through JV involvement.
Financial capital	Evidence of, and challenges related to, financial capital access mechanisms and/or accumulation, including savings, pensions, credit, remittances, and wages, through JV participation.
Physical capital	Access to tools, technology, production equipment, and infrastructure, particularly water-related, through JV involvement.
Social capital	Network expansion, relationship and trust building, mutual support within and out of JV, and the nature of decision-making participation within JV.

Following data extraction, a second stage of inductive thematic analysis was conducted to synthesise the extracted data into recurring patterns and broader themes related to our research question: to what extent have WARs such as JVs resulted in tangible socio-economic benefits for emerging farmers? The thematic analysis provided a nuanced understanding of the complexities involved in realising equity goals through WAR structures and processes.

4.3 RESULTS

The results of the analysis are presented here in 4 segments based on the three data sources i.e., emerging farmers in JVs, emerging farmers not in JVs and key informants in both catchment areas. We first look at an overview of the demographic data, then the 5 livelihood capitals, the aspect of livelihood outcomes, and lastly key informant perceptions of benefits accrued by emerging farmers in JVs. Several quotations are deliberately included throughout this chapter with the intention of making the raw data as accessible and compelling as possible. We have purposefully omitted any form of identification linked to the participants to maintain their anonymity and ensure confidentiality.

4.3.1 Overview of demographic profiles of emerging farmers interviewed for the study

Results indicated that the gender profile of emerging farmers who were interviewed skewed towards male farmers, with 64% of participants being male, while 36% were female (Figure 8a). Race distribution results presented a predominantly black population where 91% of all emerging farmers were black, with only 1 out of the 11 farmers (9%) classified as Indian (Figure 8b). Regarding education, the dominant (55%) highest level of education amongst emerging farmers was secondary education, followed by 36% of farmers who had obtained some form of tertiary education (in disciplines other than agriculture) and 9% who had primary education as their highest educational level (Figure 9a). Results showed that 91%

of emerging farmers interviewed had no formal training in agriculture and only 1 out of the 11 (9%) had obtained formal agricultural training in the form of short course certification (Figure 9a).

Participants, however, mostly regarded their training in agriculture as informal by virtue of experience gained through growing up on a farm or working as farm labourers for a substantial number of years. This was illustrated through the range of years of farming experience indicated by participants where 45% had more than 15 years of experience (this included farmers who had over 40 years of experience), 36% had between 0-5 years of experience, 9% had 6-10 years of experience and 9% had between 11-15% years of experience (Figure 9b). Lastly, results showed that the gross annual income from farming amongst participants started from 0 ZAR (27%) in instances where the farmers had not yet begun producing on the land which the JV is associated with; and ranged between 3 5001 ZAR to above 25 000 ZAR. Results revealed only 1 out of 11 (9%) of emerging farmers earned farming incomes that were above 25 000 ZAR followed by 36% who earned between 15 001 and 25 000 ZAR which was the second highest income bracket (Figure 10).

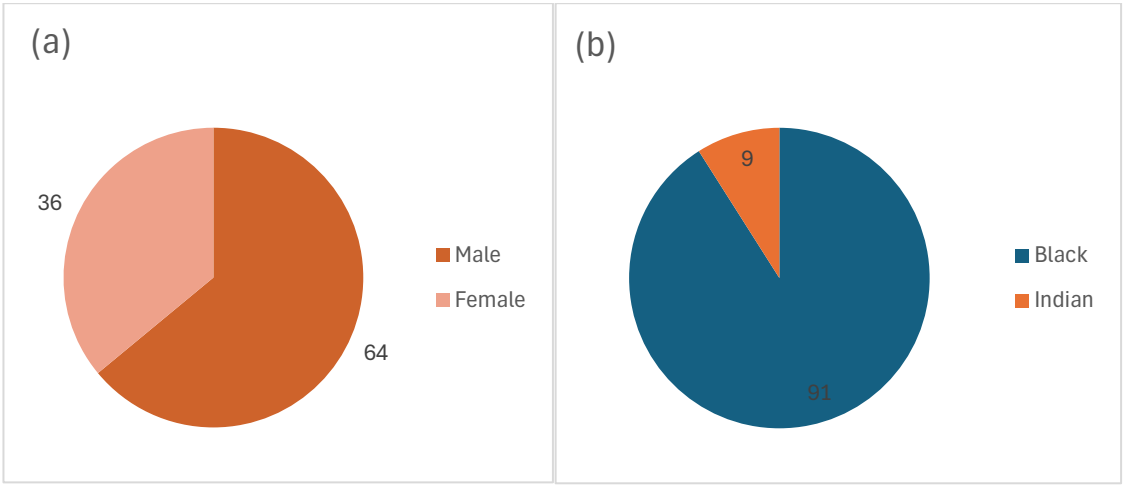

Figure 8: (a) Distribution of gender of participants (%) in the study (b) distribution of race of participants (%) in the study (n=11).

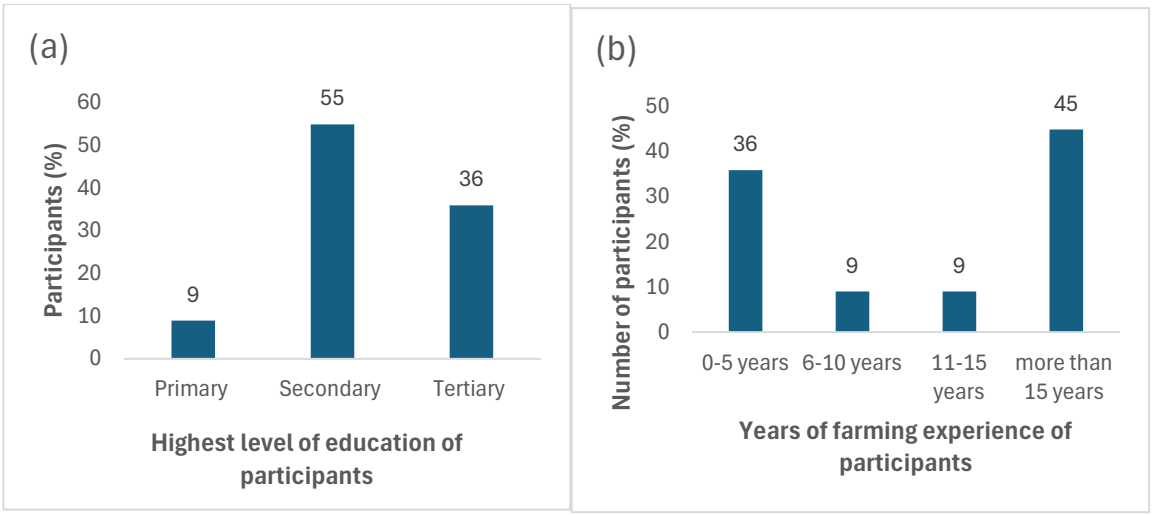

Figure 9: (a) Distribution of highest level of education amongst participants in the study (b) distribution of years of farming experience amongst participants in the study(n=11).

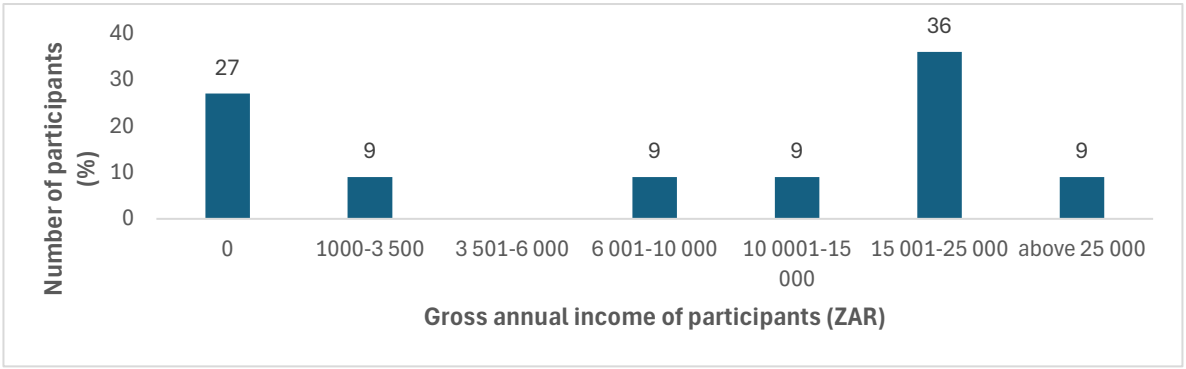

Figure 10: Distribution of gross annual income from farming (ZAR) of participants (%) interviewed in the study (n=11).

4.3.2 The Five Capital Assets

The data relating to capital assets are summarised in Table 11 to display an integrated picture of the influence of JVs on capital assets and resultant livelihood benefits and disbenefits. Thereafter, a brief narrative for each capital asset is presented with a selection of key quotes for each. The full analysis of the capital results can be found in Appendix 2.

Table 11. Five capital types framework analysis of joint venture participation for emerging farmers

Capital Type	Summary Statement	Enabling Factors	Constraining Factors
Human Capital	Variable access to skills and knowledge development with limited evidence of capacity to operate independently	• Structured training programs (supervision, management); Access to high-level expertise; Business skills acquisition; On-the-job learning opportunities;	• Inconsistent and untargeted training programs; Limited skills transfer for independent operation; Continued dependence on commercial partners; Power differentials limiting decision-

		Succession planning in some JVs	making; Knowledge concentrated in technical operations
Natural Capital	Primary contribution from emerging farmers is water rights, but with limited control over these resources	• Access to water rights; Formal land ownership/lease arrangements; Legitimised ownership through title deeds; Integration of land and water into business structure	• Climate variability threatening viability; Water rights not paired with operational control; "Fronting" practices to access water rights; Land ownership without financial capacity to develop; Vulnerability to losing water rights due to payment challenges; Community land ownership deterring investment
Financial Capital	Limited financial capital accumulation with persistent dependency on commercial partners and external funding	• Initial financial support for land purchase; Access to payroll assistance; Loans and grants from industry bodies; Connection to financial institutions through JV partners; Equipment provision through state support	• Inability to access commercial bank loans independently; Inequitable financial arrangements; High operational costs without proportionate returns; Complex profit-sharing that prioritises reinvestment; Water tariffs during non-productive establishment phase; Accumulation of debt; Limited understanding of agricultural business cycles
Physical Capital	Improved access to infrastructure and equipment but often without ownership or control	• Access to handling facilities; Borehole development and maintenance; Infrastructure support from government; Equipment provision (tractors, tools); Access to commercial partners' facilities (packhouses); Solar power installation	• Non-functional or insufficient equipment; Cable theft affecting operations; High costs of renting equipment; Lack of bulk infrastructure connections; Energy disruptions from load shedding; Inconsistent government support; Asset improvements increasing JV value without benefiting emerging farmers

4.3.2.1 Human Capital

Regarding evidence of education, knowledge, and skills acquired through JVs, there are varying degrees of learning and capacity development that have occurred through emerging farmer participation in JVs and other farming activities. While skills acquisition through structured training has been beneficial for some, there is, however, a lack of consistency in capacity development across all JVs, as one key informant highlighted, *"...training programmes have not been consistent or targeted enough"*. This was reflected by the sentiments of the emerging farmers who would commonly express a need and desire for specific training, *"I think I still need farm management... so I can know what to do." "When it comes to production, finances, everything about the farm... I know nothing."* Despite this expressed desire, the data also revealed that not all emerging farmers have the same drive to learn. This reality and frustration were evidenced through key informants representing the commercial partner entities: *"You can't force someone to come to training if they don't want to come."* There is evidence of capacity development growth, but the emerging farmers interviewed expressed limited capacity to operate their agricultural business independently. There is still heavy reliance on the JV partner for prolonged mentorship as shown in this farmer's statement: *"...if ever those guys (the SRCC) decide tomorrow, let's take our things and go out we will be left stranded, in 20 years, because we know nothing."* In stark contrast to instances where the commercial partner provides critical skills and human resources, some of the JV operations are managed predominantly by external expertise, with little intentional mentorship and capacity development of emerging farmer partners, as seen from the viewpoint of one commercial partner: *"We need people who are experienced and can guide us... not just one person running everything."* Lastly, the JV partnerships analysed demonstrate clear power differentials which have implications for emerging

farmer decision-making power and ultimately widen knowledge gaps: "*I have to wait on his side to approve things... because he's got the financial money."*

4.2.2. Natural Capital

Emerging farmers participating in JVs have different statuses of land ownership and access to water, often shaped by historical agreements and systemic challenges. Land is a highly contentious issue in the South African context, and this is reflected in the limited private ownership of land amongst emerging farmers interviewed. In a few instances, data revealed that emerging farmers would lease government-owned land: *"We don't own the land, it's government land"*. However, the main value that emerging farmers appear to bring to a JV arrangement with a commercial farmer is water rights. Water rights are not paired with land ownership, which limits the viability and perpetuates power differentials in some JVs: *"But what they have got out of me is what they wanted, which was the water rights. Now that they've got out of me what they wanted, I'm of no value to them… Water rights are worth a lot of money. Currently they are valued between 500 to 700,000 Rand a hectare".*

In instances where emerging farmers have land ownership, e.g., the community-owned land in the Tyhefu Irrigation Scheme, the lack of financial capital to maintain water rights constrained JV viability. Here, JV investment partners were reluctant to finance a JV where they lacked control of the land:

"The land belongs to the community. And now, the joint ventures–which are the investors–they see that as a threat to becoming part of such an arrangement. What they would encourage is to just rent that land, do everything else, and just pay the rentals to the community, other than being in partnership… so, (they were concerned that) there would be bullying of some sort in the process… they don't want that."

Without the financial capital invested by commercial partners in a joint venture, emerging farmers' viability is at high risk. There is a clear sense of fragility in emerging farmers becoming sustainable and independent, particularly for those lacking substantial financial capital. Struggling emerging farmers who, in rare instances, own land with water rights are vulnerable to being bought out by commercial farmers with greater financial muscle, an unintended consequence of the water and land allocation reform policy intentions. Despite having some form of land ownership and access to water, climate variability remains a threat to production viability, and this is further compounded by emerging farmer vulnerability at the hands of those deemed custodians of water. This is highlighted in the following quote from an emerging farmer in the Sundays River valley, which is predominantly under citrus production: *"Now we've got water rights. And we have to pay the water taxes and that sort of thing. In the circumstances where there is a climate that is not conducive to successful farming, which is what we find at the moment, you then find that the Lower Sunday's River Irrigation Scheme withdraws water, and you can't do citrus farming without water. Our access to water rights is under threat...without water—we won't be able to farm at all".*

4.3.2.2 Financial Capital

Loans from commercial banks are typically not accessible to emerging farmers looking to establish themselves independently, thus necessitating commercial partner reliance. One farmer explains their options:

"... the funding is subject to what is called the National Credit Act....Which means you cannot give money to someone who can't pay it back. Neither can you give money to someone who does not have the collateral for the debt. That means, by default, commercial banks cannot fund 100% black projects

like ours, because, one, we are not yet operating, meaning that there is no cash flow that they can fund from. And secondly, we don't have the collateral that they need to fund. That now forces us to use a different funding stream. That funding stream is to go to another white person who has all of those, and say, "look, can you become our partner?"

Apart from access to financial loans, the primary form of assistance provided by the state has been in the form of equipment and production supplies. For instance, one emerging farmer who is a farm manager on a JV farm shared, *"We got two new tractors... from the Jobs Fund"*. However, some emerging farmers expressed their concern that these government aids only place them in further financial constraints: *"Because whatever infrastructure or implements that the government is giving to us, is putting up the value of the company, which means it's making the 25% more expensive. And the other thing that strikes my mind is that: whatever government is giving us, even if there's nothing that we, as (the) workers trust is getting, except us people, who are working in the business, (are) getting paid every month, but for other reasons, there is nothing that we are getting out of the farm."*

Data showed that emerging farmers in JVs are disgruntled by the awareness of the inequity of the financial arrangement of the partnerships:

"... you take 85 + 50 versus 40 (million), ne? And then (the commercial partner) still wants me to pay for the land, and for the development costs, ne? Out of that 10%, the Community Trust must eat. Out of 10%, ne? And then it gets split, and they still benefit there. But here is where they're making the money on their own farms, ok. And that is why we said this is fronting. It's a scam."

Establishing a new commercial farm requires an environmental impact assessment as well as obtaining a water licence, both of which are lengthy processes to complete. Up until recently (referring to the intervention of the revised raw water pricing strategy in 2024), the water tariff has been activated as soon as the water licence has been allocated, regardless of whether agricultural production has commenced or not. This has been a significant financial constraint for establishing emerging farmers, as documented in the response below:

"But you see the saddest part is that immediately (after) you are granted that water (license), the tariffs go up, you need to pay. The water bill just starts. Remember, you have a virgin land. (Although the emerging farmer may have the water (water rights), but they lack the financial capital to pay for tariffs therefore still heavily reliant on the established farmer. So, you have to do that EIA… I'm hearing that it takes a year. I already paid 750K now, and I haven't even planted a thing. I haven't even de-bushed. Imagine, I don't have a partner that is financial, what will happen to me? You see, we are doomed. Doomed, doomed, doomed! I was going to sit with that negative, year one, because my EIA is still on…. I think at least there must be a free phase, or while maybe the EIA is being done. It's being in process because its scope after scope, phase after phase. While that time..., at least DWS (Dept of Water and Sanitation) gives you a gap, or cuts your tariffs in half. I'm not saying they must write it off and then wait until the EIA is done."

The lack of sustained financial support for emerging farmers to become profitable and overcome the initial high input costs to sustain agricultural operations, as well as seasonal disruptions (e.g., drought) affecting production, has resulted in many of these farms going into debt: *"We've got (have had) two consecutive very difficult years in the citrus industry, for everyone. So it's not looking good, but now I must go and knock at the government's doors, looking for grants, to boost us for three to five years; we cannot get into more debt, in operating the farm."*

Data showed many of the JV arrangements require significant financial, management, and operational input from the commercial partner to maintain viability. In some instances, the commercial partner wears two hats, as a shareholder and as a contracted operational manager. This results in limited financial gain for the emerging farmer partners at this stage of the JV lifespan. There is a varied understanding of the true production costs of citrus farming amongst the emerging farmers involved in the JVs, leading to misplaced expectations and disgruntlement: *"If there's profits, we first take out 50%. As the company, for the operations of the next season. And then, we will take the other 50%, and distribute and share it: 25/75 (split). And then out of the 75, we will share it as dividends amongst the 47 (beneficiaries/members). Which is sometimes now creating a problem amongst us. As the workers' trust. Because some/most of the people feel like the other partner is double dipping, because we are getting their 25% share. But every month they are getting fees… You are told that there is no money. There is no dividend; you don't get any, not even one rand out of it, but the farm must just continue again next year. And some of our people don't even understand these grant things. And now, you said there's no money".*

4.3.2.3 Physical Capital

The data indicate that emerging farmers have some access to water infrastructure, but persistent challenges remain. Many emerging farmers face difficulties related to bore-holes, access to bulk water for irrigation, and theft. One farmer explained, *"I extract underground water through boreholes...it's about ten. But not all are working. It's only two that are working."* Another respondent highlighted the effects of theft on operations: *"One of the major challenges is cable theft that is affecting the functioning of the boreholes".* The lack of functional equipment significantly hampers productivity and reliance on renting equipment, which quickly cuts into potential profits. One farmer explained, *"The tractors which were necessary were already breaking up; the harvesting machines were not working well".* Another added, *"To prepare the land on your 1 hectare is costing you R900...Rent a tractor R900...the costs are high!" A complete lack of or limited foundational infrastructure hinders emerging farmer establishment. One farmer referred to systemic barriers: "The first thing you must demonstrate to them is that you have land...then you must prove that you can connect your farm to the bulk infrastructure".*

Energy shortages, exacerbated by load shedding, significantly disrupt farming activities, particularly irrigation. *"When it goes to stage 4, it's fine, but when it's four hours twice a day, it's a nightmare."* Solar power has provided some relief, but currently its application is often limited to specific uses: *"They put a solar system for the pump to pump the water out".* Data showed that there is evidence of the adoption of innovation and technology amongst some emerging farmers despite resource constraints. These farmers are seeking to innovate to keep up with export market standards. For instance, one farmer spoke of importing specialised machinery: *"And they specifically want that. So, we are looking at importing now a machine, because we imported a machine to do the trimming of the hemp."* Another noted the benefits of technology for security, using *"robo guards"* to protect assets:

> *"We do have 'robo guards', outside, that are motion detectors...It's like a beam that it picks up motion. It's a motion sensor, so as soon as somebody walks past, it triggers and then it goes off and alarm goes off in our house. So, we can see in which zone the person is in."*

4.3.2.4 Social Capital

Data showed evidence of numerous learning, information sharing, and agricultural development networks available to emerging farmers both within and across JVs in the respective case study sites. These exist in the form of group training programs arranged by the commercial partners; *"The SRCC provides general group training for emerging farmers"*, independent farmers' association specifically for black farmers like

the Sunday River Valley Black farmers association, and educational material presented on radio and television: *"Sometimes other skills I learn when I listen to the radio sometimes, also I like to watch TV, then I see a bit of the how they do some things…Let's say vaccinations, dipping…Things like that…"*.

Emerging farmers also make use of family networks for advice and learning: *"I've got my cousin… my cousin is farming by there, but they have everything, and the government is pushing them, is giving them everything they want."* That's when I spoke with her about these papers and she said, *"Start here. If you start here, then everything will work"*. These family networks are sometimes used as sources of labour when there is insufficient capital to pay staff for labour: *"We can't employ. How are we going to pay them? Because what we do, we're using our family members just to help."*

A notable finding in favour of emerging farmers in JVs was that farmers who were not in JVs reported not having the same level of social capital and the wealth of exposure to numerous beneficial networks that are meant to add value, as presented in the following quotation:

"No, none of that. We don't have that, official associations. Ja, they don't cater for us. Look, take these citrus guys, they've got a Citrus Growers Association which is there, you know, and then they've got working groups and those kinds of stuff. They're very organized. We are not."

Data revealed that besides water or land resources and bulk infrastructure as the prerequisites for emerging farmers to enter JVs, they additionally require a business plan. Emerging farmers mostly only have the natural capital, and therefore rely on resources available through their social networks to get assistance in developing business plans. This poses a significant barrier to entry for emerging farmers. Emerging farmers in JVs in the study showed their awareness of the need to maximise social capital assets to facilitate the acquisition of other capital assets and positive livelihood outcomes. There is, therefore a strong sense of social cohesion amongst emerging farmers towards this goal. The issue of theft raised in subsequent sections is rife in communities where emerging farmers in JVs operate. The limited financial capital to invest in security results in a strong sense of community cohesion, particularly when fighting crime, as there is no functional police service (too far to be of practical value). In some instances, such as in the case study of the study area of the Tyhefu Irrigation Board in the Fish River catchment:

"If it is said that the thugs have come, we just blow a whistle and our phones, and get told to come out, get out we'll meet on the road, come we are at a certain, place and we meet each other. Yes, the car will be set on fire. We said that we don't have a police station, the police station is far away, the road is awkward, and there is no transport. We are wrong for taking the law into our hands, but what should we do?"

Both emerging and commercial farmers derive benefit from each other's social networks to progress. The data reveal that in the same way emerging farmers leverage the established commercial farmers' existing networks to accelerate processes such as the completion of an environmental impact assessment (EIA), commercial farmers also optimise the existing networks that emerging farmers have access to by virtue of being classified as historically disadvantaged. Partnership with an emerging farmer is seen as a strategy to access historically disadvantaged individual (HDI)-specific relief funding. Commercial farmers in the Citrus Growers Association use the emerging farmers' status to access government support funding:

"There's a white individual, entering into partnership with 100% black (owned company) who are in need. So that means for them, they are, they are hitting trans-formation targets."

"The three white farmers signed the agreement on the 29th of June this year. We know nothing about it." "a second part of fronting… using the company name to go and do business on the side, "

Data identified a lack of transparency between commercial farmers and their emerging farmers partners in this respect as a significant challenge. As the quote above illustrates, commercial farmers are leveraging partnerships to expand their business without being transparent; emerging farmers do not benefit from these additional business ventures.

The data show there is a support base for emerging farmers from extension officers in the respective case studies. However, extension services differed significantly depending on location, with some emerging farmers in JVs indicating that they found the assistance offered very useful to their farming practice and others not. Farmers not in JVs relied on this support more than emerging farmers in JVs, possibly revealing a tangible benefit of being in a JV: *"The basic burning issue is this: the extension officer has his own group of people that he was working with…"*

4.3.3 Livelihood outcomes

We now summarise the perceived livelihood outcomes accrued from being in JVs as expressed by emerging farmers in JVs. Interview responses revealed the following themes: the type of JV influences the livelihood outcomes derived from the JV, the challenge of managing unrealistic farming expectations, an aging demographic of farmers, diversification of income, theft, and exploitation of JVs/fronting.

4.3.3.1 The types/modality of JV influences livelihood outcomes

The data revealed that the term JV in the South African agricultural sector encompasses a variety of types that involve different actors across the agricultural value chain with their own unique arrangements. Amongst the types of JVs identified in the data described by participants are management agreements, farm worker equity schemes, mentorship partnerships, joint ventures, strategic partnerships and lease agreements. This diversity of modalities is supported by literature on JVs in South Africa. Further data showed that the arrangement of emerging farmers in each type of JV differs, where some involve one emerging farmer in partnership with one commercial farmer, while others are designed to have several beneficiaries grouped together in the form of a trust (often farm workers of a specific farm) as the emerging farmer partner in partnership with one established commercial farmer.

The characteristics of the emerging farmers represented in the sample for the study differed vastly in relation to the highest level of education, monthly household income, years of farming experience and whether they had any formal training in agriculture. Each of these characteristics has implications for the livelihood outcomes accrued by the emerging farmers from being in a form of JV. Data suggests that some emerging farmers in specific types of JVs experience more positive livelihood outcomes than others through JV partnerships. For example, emerging farmers who had higher levels of education (specifically, tertiary education) had a tendency to enter partnerships as the only emerging farmers in partnership with an established commercial farmer partner. Such partnerships presented a clear correlation between positive livelihood outcomes, such as a mindset geared toward thinking about the sustainability of the livelihood outcomes, and educational level, which differed greatly from JVs where the collaboration is between a commercial partner and a group of workers, shareholders, small-scale farmers, entrepreneurs or community members. In the latter instance, the emerging farmer partner represented by the collective will often have limited commercial experience with little or no access to finance or markets and lack the capacity to critically scrutinize the JV agreements at the onset to ensure there is a fair sharing of benefits, often leading to disgruntlement while in the JV. This is illustrated in the two contrasting quotes below from

an emerging farmer representing a worker's trust comprised of over 50 beneficiaries and an emerging farmer with a tertiary education in sole partnership with a commercial farmer, respectively.

"… the way that it's going now, there's actually nothing that you can show that you've been in the business for 20 years. Because, whatever you're getting out of those dividends, you can't even say I'm going to build a house. There's something that you can point and say: "I built this house out of it". And also, you can't even say we have expanded, we have even added another land, on top of what we have, because that should have been the case by now."

"No school fees, because here you're entering into a partnership with someone who's already an expert in what he's doing. He's paid his school fees, for three generations. So now we're getting 100% zero school fees as a result of this partnership."

Data showed a contrast between emerging farmers with higher educational levels who displayed higher level thinking relating to how best to position themselves within the partnership for future success (envisioning the future) and emerging farmers who did not have tertiary education qualifications.

"I'm here to learn and I'm taking this project as a cash flow. So that when I got, maybe after 20 years or 15 years, I've got my own experience and I secured maybe funds, out of the project that I'm currently establishing, and then I will go and buy my own farm that will be under my name, under the title deed will be my name. So that's how I'm looking at it currently…That's sustainable. Now, I know. This is my land, not 20 people (who are) beneficiaries behind me. That system does not work. We have seen that the beneficiary system is a dead cow that you're trying to wake up. You know?"

"But look at his children. Where are your kids? How old? How far is he now (with school?). Where is the eldest one, where is he now? He's working on another farm. Why is he not in university? You understand? You're sitting with all this money. Why are your children not educated? So what's the purpose of you, involving (yourself) in that. No? You understand what I'm saying? And not one of them is like that. Not one of their children has got to varsity. The only thing they buy themselves every year is fancy cars." In this quotation the emerging farmer who was not in a JV at the time of the interview refers to another emerging farmer in a JV characterized by a workers' trust.

One other JV arrangement in which there was a distinction in the livelihood outcomes derived by the emerging farmers was in cases where the joint venture took on the form of a management agreement. In this context, the emerging farmers who were previously workers on the farms became owners of the same farms through lease agreements for the land from the government. These farms would then identify themselves as *"100% black owned"* and enter partnerships with established commercial farmers for the sole purpose of the commercial farmers aiding with managing their farms. Some of the previous farm workers take on the role of farm managers in the new arrangement.

"They are helping us to manage the farms. We were workers of the farms, and then we became the owners of the farms...Without the experience. Then we take SRCC to manage the farms with us. In the farms that now they are managers, there were white managers in those farms...Then they go through the trainings, then they became the managers of the farms, and then they leave those… previous managers and they leave (the previous ones) and then they become…fully managing the farm...Fully managing. They are working with the production manager of the SRCC."

The livelihood outcomes for emerging farmers in these kinds of arrangements were significant, though evidently skewed towards managers deriving weightier benefits compared to workers, notably raising the issue of power differentials impacting the distribution of benefits amongst emerging farmers:

"That's what we are doing. And for our permanent workers, we are paying medical aid for them"

"The company is paying that for the people. During the month-end, we pay for them R50 for the bank charges...because there's a bank charge when you withdraw money and all that."

"Also, the managers, as we are sitting here, we have medical aid, and the company is paying for that...they are not deducting it; the company is not deducting the money from us; it is paying."

"The seasonal workers are paying half of the transport, and then the company is paying half."

"I can say also the licenses that we got. Before our license, we paid (for) ourselves, but now, every year it's the farm that pays for us; the license". Referring to driver's license.

"There is actually nothing that we, as (the) workers trust is getting, except us people, who are working in the business as managers, (are) getting paid every month, but for other reasons, there is nothing that we are getting out of the farm as the trust."

"And so the farm houses, where the permanent workers are staying, that is also free paid by the company."

"We have here an ABET (adult basic education and training) *class for our permanent workers to come and study during working hours. It is 2 hours only a day, to come to ABET, to learn, read and write and to learn the computer because now there is a teacher there, but there are computers who are teaching you, now you are learning to read and write, and the language because the training is in English."*

"According to my heart, we are doing good. As the black farmers, we are doing good, and we are the first BEE farm that bought a farm with the profit of the leased farms, in South Africa."

4.3.3.2 Managing unrealistic expectations

A common theme that emerged from the data was the challenge of emerging farmers in JVs having difficulties reconciling their expectations for tangible livelihood outcomes from their involvement in JVs with the reality of the long-term nature of farming. This reality is also expressed differently across the different kinds of emerging farmers in JVs, with some having an understanding and appreciation of the time that is required to begin to derive any form of profitable gain and others not, inevitably causing frustration. When evaluating livelihood outcomes, it is necessary to consider whether the contract agreement accounts for the long-term growth of the specific enterprise, as is the case with citrus in the Lower Sundays River case study:

"Then you wait also seven years, for that orchard to start paying you back, and in 10 years then you earn something. So it's a long-term on citrus."

"Now, unless you have extremely deep pockets, even if you manage to secure the land, if you do not have extremely deep pockets to be able to carry you…and your expenses, for that five years, or eight

years, until whatever it is, realistically, you're looking at about 7 years, before you can produce your first crop. You are now heading to nothing."

"So some of the orchards are very old orchards. They are not producing as much anymore, so we have to pull out some of the orchards. And then replant them, which takes another five years, before we can produce, or you get something to export and get profit out of it. So, you have to wait, but not even wait, because you have to spray those trees, for those years, you have to do everything for the trees, to care for them, so that they can be have(ing) some fruits, without getting anything in return, so that is actually the part that's making the loss, and not all of us understands that, remember. And in our culture, if you own a farm, every time that you see oranges on the trees, you expect money."

"Now you told them there's no money, but there are two new tractors. How did you get the tractors? If there's no money? So you are busy, spending our money on things that are enriching the other partners. Because that's how they understand everything".

"So most black farmers, at the end of the day, fail in farming because the assumptions on which blacks are being brought into farming have not been interrogated sufficiently - both in terms of what is being given, (as well as what) is on offer, the training, the water rights...".

4.3.3.3 The challenge of an aging farming population

Data revealed that one of the concerns regarding livelihood outcomes amongst emerging farmers was the lack of interest of the youth in participating in farming for a livelihood. Emerging farmers in JV interviewed in the study were typically not young people. Interestingly, the only instance where an emerging farmer showed intention towards grooming their children to carry on the family's farming operations was from the emerging farmers not in JVs.

"And the other thing is, that the age is not on our side because we're getting older. We have so many dreams about the company, but age is standing in our way. Ja, (we are) one foot inside, and one foot outside. It's not good."

"There is lot of opportunities in farming in our days for young people, and the trainings that they are doing is during the waking hours...On that week of the training, they are not coming to work...And you can't force someone to come to training if they don't want to come."

"And he will take over, because he grew up here, we decided not to send our child to a school outside the, you know (the valley). Ja, so he's already a farmer, he's already had a teenage experience of farming, without even farming it, you see."

4.3.3.4 Diversification of income

Data revealed small farms involved in JVs may not always be economically viable, particularly those not actively optimising their profitability. There was evidence of emerging farmers needing to rely on supplementary sources of income outside of farming activities to sustain their livelihoods. Alternative income sources include grants, small business ventures, and Farming alone does not offer sufficient livelihood security. This highlights the question of the viability of JVs as a vehicle for improving the livelihoods of emerging farmers.

"So I mean, because I sell the ointment locally already. It was sent to Cape Town, to Joburg, East London, Mozambique. Yeah." In reference to the hemp ointment produced by the farmer.

"But we do have our licenses to cultivate, store and transport and to do research on it (hemp) exploring new livelihood ventures… So, the other market that we're looking at, is to actually sell, make clones. And then, the others, they can buy from us. Because then we've got the registered hemp seed. We'll be a nursery, because we are registered as a nursery as well. And there's not a market yet, for it, as such. Well, we're going to create our own market".

"we have various crops that we put in (that we plant over) various parts of the year. So we're not monocropping, you understand?"

"we have too many thorn trees, and I said to them, "Okay, I'll buy a chainsaw." I bought a chainsaw, two chainsaws, and I gave it to my uncle and a friend. And I said to them, "Guys, I don't have money to pay you, but why don't you cut the wood and sell the wood, and then use the money for food, for whatever you want." And then even today, they are still doing that."

"Ok, well we are actually a bit of a complicated story, because we are farming and then we are a land surveying company as well. So we don't actually draw a salary from the farm...We get our salary, we get from the survey (company)."

4.3.3.5 Theft as a livelihood threat

Data showed that theft was a prevalent constraint that many emerging farmers both in and out of JVs encountered posing negative implications on the sustainability of their livelihood outcomes. This challenge is compounded by financial constraints to sufficiently strengthen their security measures on the farms. The data suggest that emerging farmers who are in JVs find themselves equally vulnerable to theft as those who are not in JVs which yet again necessitates interrogation into the reasons why JVs fail to improve emerging farmer livelihoods.

"when you plant, you've got to plant for the thief as well. I said: "But my dad's thief, is not today's thief." Today's thief comes with a bakkie (pickup), and he loads 500 cabbages on the bakkie and he steals a whole load, you know."

"But we have some challenges at the farm, like the theft, they're stealing a lot from us, simply because we don't have security, like a person who can avail themselves, say that now, I'll stay there for full time."

"Stock theft for us… They can steal the whole life. The boundary fence is not in good condition… Even if you can lock the gate, when they want to come in, they can come reach the boundary fence, it's not 100% there. They can always come in."

""They are stealing lemons. We have to apply for funding so that we can have electric fence around that farm so that people cannot steal, but they are stealing, but not like before."

"We are using the electricity wire, but as well as we use electricity wire, they go through. They know how, to get in through the fences…".

4.3.3.6 Exploitation of JVs/Fronting

Lastly the data indicated a recurring theme of awareness of the ways in which commercial farmers exploit the concept of JVs by obtaining buy-in from emerging farmers solely for their personal benefit. This reality was commonly coined as 'fronting'. Some emerging farmers in JVs interviewed in the study plainly revealed that they were aware they were being exploited and that the JVs are not achieving the equity imperatives they were designed for. This influences the emerging farmers' attitudes towards JVs with some viewing them with significant contempt and suspicion and others who had come out of JVs considering themselves better off out of a JV than in. The data further showed that in several instances, this awareness only surfaced when the emerging farmers were already entangled in the arrangement by contractual obligations and therefore settled to accept the unhealthy co-dependency that is established through the partnerships. Emerging farmers would express how they knew their commercial farmer partners were disinterested in strengthening their capacity to position emerging farmers for independence and only interested in the natural capital, either land or water, that the emerging partner comes into the JV with. Despite this knowledge, emerging farmers feel powerless to act as they often find themselves plagued by constraints across all five of the capital assets. An interesting finding is that this level of awareness was generally evident amongst emerging farmers with higher educational levels and some form of qualification in other disciplinary foci than agriculture, e.g., engineering, entrepreneurship, education, etc.

"You will actually accept that there's very little black empowerment taking place. Even if you have a black person who owns a farm, it's only a notional owning of the farm, right? Because actually (in the) technical respect, the farm is actually managed by white people."

"But there's nothing that you get, like, now last week I even received a form that says, can we take a production loan from them? To operate the business that we are sharing. Can the company take a production loan from them? So that we can operate, and then when there's income, they will deduct their (repayment), and I said: I must think about this, because I don't see it really, because it seems to me we are just finding ourselves deeper and deeper in trouble, and at the end of the day, we will never come out of here. Never!"

""Out of that 10%, the Community Trust must eat. Out of 10%, ne? And then it gets split, and they still benefit there. But here is where they're making the money on their own farms, ok. And that is why we said this is fronting. It's a scam".

""It's an unhealthy co-dependency and an unbalanced co-dependency, from the way that I see it".

"And now, but actually my recommendation is, the government stay away from joint ventures. It's a flop. No (it is). Really. They must stay away. The government must even stay away from buying farms for a group of people, because we don't see things the same way. I understand much (more) now that they understood 15 years ago and there's someone who doesn't even understand 1% of what I understand, and I have to deal with that."

4.3.4 Key informant interviews data

The main purpose of including the selection of key informant interviews in this chapter was to see to what extent emerging farmer perceptions of the livelihood benefits accrued from being in JVs differed from the perceptions of other important actors in the land-water-agricultural nexus. The data shows a variation of positive and negative attitudes towards JVs amongst key informants, centred around a major theme of

the challenge of competing interests. Specifically, this pertains to how commercial farmers find themselves conflicted between the need to maintain the bottom line of production to sustain their supply to national and export markets versus genuinely desiring transformation and in so doing prioritize the goal of equity. Key informants expressed how this conflict of values translates to the way emerging farmers will experience being a part of a JV. This is very clearly depicted through the viewpoint of an informant from the Lower Sundays Water Users (LSWUA) Association:

"JV's that are formed with commercial farmers are done so for the reasons of commerce. Definitely so. They are not there for altruistic reasons. The JV's that are extended, or the hands that are extended, are not necessarily there for humanitarian reasons, or for the cause of advancing. They are definitely there to advance their own commercial agendas. If I can put it that way. I'm not saying it's a bad thing. It's not a bad thing…In the meantime, the funding model that has been set up by DWS specifically. I'm not sure, I can't speak for other provinces, but for our province here, you receive a water use license, you pay for it, and you become eligible immediately. Now, unless you have extremely deep pockets, even if you manage to secure the land, if you do not have extremely deep pockets to be able to carry you…and your expenses, for those five years, or eight years, until whatever it is, realistically, you're looking at about 7 years, before you can produce your first crop. You are now heading to nothing. That actually negates the whole purpose of getting extra role players, because what you're actually doing is you're not enriching people. You're not empowering people. What you're doing is impoverishing them. It's basically a debt trap, so they are forced to borrow the money".

The Water User Association takes an equity focused standpoint and appears to stand in solidarity with emerging farmers, having an in-depth understanding of how JVs are typically designed:

"Our views are: we would like to advance the cause of equitable distribution of water. Equitable distribution of water comes with the fact that there needs to be land attached."

Data showed that some emerging farmers felt differently about the association's values and investment in them based on personal experiences. In these instances, emerging farmers felt that the Water User Association offers more support to commercial farmers than to their emerging farmer counterparts. For example,

"But if your water runs out…then you will have to buy water from the Irrigation Board (Former name of the Water User Association)*. Should those farms, whether it doesn't matter what colour/race you are, should that farmer fall behind with their water (payments)… And let's say you're bordering here at six months, you're in arrears. The Irrigation Board is very on your back. Always letters. Shut your water down…They're not shy to; they reduce your water. 25%, 50%, 75%, until it's off. And it's a quick thing, and then all of a sudden you'll get a wealthy, big farmer, who will phone you and ask you: "Don't you want to sell your farm?" Why? Where is that inside info (from)? To me, there is… (instructions/inside info saying) "this farmer is struggling. He can't pay his bill. Go and offer him whatever."*

This finding raises questions around the motives behind various actors' support to emerging farmers in JVs and a broader question of how equity imperatives are embraced at different scales. The interplay between institutional arrangements and equity imperatives needs to be evaluated across different scales.

This conception of motive is reinforced by the interview with a SRCC informant who represents a JV partner for multiple JVs in the Sundays River Valley:

"All, I would say most, I would say 99% of black farmers that are farming that aren't in a joint venture, must be in one. At least for a certain period. If that must be funded by government or an NGO or wherever, because you need that support, you need it."

This commentary suggests a viewpoint that is, on the one hand, in support of JVs. but simultaneously in support of the financial support attached to them, which may potentially be for motives that are self-serving. The data also suggests that there is an existing close relationship between the government and the commercial partners in JVs, which is meant to serve the overall benefit of all partners in the agreement:

"Look, government helps. I don't want to say they don't help, but they help with small things…but it's something. I don't want to shoot them down. Look, they've also got budgets, and I understand it, but sometimes I don't understand their logic. I just think they must think about more support, because there are so many failures, where there weren't joint ventures. Look, government sits on our trust as well, so they exactly know what's going on in our business. So, they know we need financial support. But then again. I say for projects. You can't just go to a farm and say here's 2 million rand. What are they going to do with it? Government helps us in terms of we say what pesticides we need and then they pay that person, and they deliver it to us. It helps a lot."

There is evidence that the commercial partner has an extensive social network and access to other actors within the agricultural value chain, which ideally positions them for success:

"We've got government departments, and we've got the SRCC, and we've got the company. Rural Development and Land Reform. In terms of anyone from the private sector, we've got the CGA (the Citrus Growers Association). They are also involved. We're doing a project with them now. Then the Jobs Fund with FNB. And there is also a system there, where you have 40% is grant funding and 60% you get at prime minus 4. And it's a 10-year period project or a seven-year period."

In the case of the Sundays River Citrus Company, which is a significant actor in the Sundays River Valley case study, there is some evidence of attempts to include emerging farmer partners in decision-making. This may be viewed as a livelihood outcome, where emerging farmers are given a platform to play an active role in farming activities across the value chain:

"SRCC expertise and decision-making process of the board: we do in-house, we try where possible. Obviously, there are constraints in terms of education. And then we advertise. It's an open market. If you need an admin clerk for a certain job, then we advertise and we get the best candidate, and we appoint the candidate. So, in saying you now need to, let's give an example of you need to hire a new…Production manager. The trustees, or I would say the directors in the company, make that decision. You can't work with 48 beneficiaries. So they, they've got the mandate, they were elected there, they are representing the company. And they'll give – we will have guidelines of what the KPA's (key performance areas) of this post. And then we advertise and then we have the best candidate we need to do the job."

Although the selection process of jobs within the company formed through a JV appears fair, there is a level of complexity that arises in instances where the JV is structured as a group of beneficiaries in partnership with the commercial partner by means of a workers' trust. The challenge of a limited number of individuals who have education beyond the secondary school level reduces the selection pool from which emerging farmers may be selected. This restricts the potential livelihood benefits to only a select

few. This also means that involvement in decision making which can be regarded as a social capital gain for emerging famers is mostly only experienced by a small proportion of emerging farmers.

The issue of literacy and education was raised in the interview responses and the data suggests that the SRCC considers the need to build capacity through educating emerging farmers a high priority:

"You must remember all our people that we work with come from previous disadvantaged (situations/backgrounds). They were at school for (until) maybe standard 4 (Grade 6) or maybe standard 2 (Grade 4). Some of them have [a] high school [level education]l. Then their parents struggled, had to go and work, so they were not educated. You can't just… Some people didn't even go to school. So how do you fix a problem that comes for 50 years in 20 years, you're not going to do that. We do lots of adult training, just people learning to read and write, so they can see their pace and see what's going on... And that's our biggest challenge because if we do training, you can't put people on a training course if they can't read or write, what are they going to do in the class. So, it's very long term."

Lastly, the data revealed that challenges with the labour force pose a constraint for emerging farmers in JVs in relation to livelihood outcomes and benefits.

"In my opinion, look, labour cost is very high, and we've got no control over it… So firstly, we've got a very high labour costs and we are unfortunately labour intensive… And essentially, going with that is productivity. We've got a lazy labour force. Especially in the area. That's why sometimes people bring in people from other places or Zimbabweans, or whoever, those people want to work, there's incentive schemes, they make good money, they make double the money that our locals make."

"But we must have a percentage of locals. They (the Black BEE partners) don't want to employ local people (? - 21:19 mins) OK. But we can't, according to our legislation, you know, we're not allowed to. You know, there's inspectors coming around looking at your papers, lots of the papers are fraudulent, you know, and then it's your fault, not the guys that you employed."

The issue of hiring foreign nationals over South African citizens for agricultural jobs due to perceived laziness exposes a deeper systemic challenge that involves other key government sectors working in tandem with the agricultural sector.

The data from an interview with a Tyhefu informant also highlighted the same challenge involving foreign nationals indicated above:

"Zimbabwean fishermen pay the chief to access and fish in the dams. They then sell the fish on the local market."

The support from the chief towards this end poses a challenge to the livelihood benefits that could be accrued by South African emerging farmers.

The issue of extension support suggests that there is a conflict of interest between different actors in the value chain pertaining to support from extension officers. This is highly significant as it has implications of trust and power differentials at play.

"The basic burning issue is this: the extension officer has his own group of people that he was working with. So, by that, the community, the Traditional Authority, was now divided amongst themselves because there are those people that go with the chief, and there are those that go with the extension

officer. And the unfortunate part is that the extension officer is an employee of the department of agriculture. So the department tends to listen to his voice. So even the department of water and sanitation was listening to the extension. And the whole municipality."

Conflict relating to the correct channels of reporting and divisions within the community appear to be a major barrier to JV success in the case study of the Tyhefu Irrigation Board study area. The data show that past JV attempts in the area were meant to ideally involve the chief and the traditional council as the representatives of the emerging farmer partner on behalf of the community. The reality however was that this role of the traditional authority was heavily contested as illustrated in the quote below:

"That's why there is no development here. Because the chief, when he looks at these documents, he will notice and find out that the processes were not followed according to the way they were supposed to go. And say, No, where did you put the headman? (Did you consult with the headman?) And you find out that they didn't go to him. The headman doesn't know anything about the programme being undertaken. That causes the deadlock and the process to stop. Even this pomegranate you see was cultivated without our consultation. It died. Because what was happening was this issue of the group dynamics within that makes this area to be dry, like this, because of those dynamics, because no deployment could take place because of the issues, land and he owns the land; he has the mandate on the land, and there (is) that other side with their own issues. So even the pomegranate that was supposed to be planted is stalled because of those divisions within the villages. Because we find that the business plan will come without the knowledge of his subjects in the villages, and automatically it will be returned back because the chieftaincy is not aware."

The interview with a Tyhefu informant showed that the traditional authority's long-term vision for the study area involved exploring opportunities that would emancipate emerging farmers from dependency on JVs for success, but rather empower them to be successful independently, to take personal ownership of their respective farming responsibilities and to break free from grant dependency as seen in the quote below. An alternative to this model is presented through the suggestion of the establishment of a cooperative of emerging farmers i.e., community members with food plots, thus viewing social capital as a means of unlocking other capitals and livelihood outcomes:

"… which I think are key: one is to develop this land at a commercial scale, two to address the issue of poverty and the rate of unemployment in the area, and the third one is around the plot ownership, that the objective now is to have one hectare one farmer on the plot. So that people get used into owning their own land. So, it means which means you are trying to avoid or run away from the issue of group farming, ja *(yes.). We will see if we can combine those one hectares to form one entity, made up of one hectare of farms, and form one cooperative."*

"Yes, now, as a way to break out (away) from those divisions, they have decided to establish this new entity that we once asked about earlier on. To try to mediate and facilitate the development and the revitalization of the irrigation scheme. And now the Department of Agriculture, the Department of Water and Sanitation, the local municipality and the Ward Councillor, they are involved, although the ward councillor, at times they are busy; otherwise, at least now there is a light at the end of the tunnel with the initiatives because they have tried to bring (them) together. Or everyone is focused on one objective. So, that is the stand. Now I'm going to sign."

Data show that the Department of Social Development has been heavily invested and is evidently more involved in agriculture in the area than its Department of Agriculture counterparts. This suggests that the

issue of agricultural development is viewed as more of a social development issue and raises questions about cohesion between government departments to facilitate emerging farmer development:

"OK. Ja (yes), one outcry from the side of the chief is that he hasn't seen the MEC (Member of Executive Council) *from the side of agriculture. He has now been overtaken by the MEC of Department of Social Development of which there is land here, there is water here and people in South Africa then cry of unemployment, but here in this village there is no such thing of unemployment because those people are farming."*

Results also revealed that the infrastructure from the old irrigation schemes is still intact in this case study area, and there is evidence of a desire to explore how to leverage off the existing infrastructure to the benefit of the emerging farmers:

"And the sheds that were used before in the irrigation scheme, they are still there. They are still intact, they've never been vandalized, you see. And also, in the Eastern Cape, there is plenty of land and even here, because we don't have the mines, but we have the land for that. But the problem is the involvement of politics and everything that is being done."

4.3.5 Comparison with emerging farmers not in JVs

The study made use of one in-depth interview with farmers who had not been in any kind of JV before as a tool to draw comparisons of the livelihood outcomes they had accrued when compared to emerging farmers in JVs. A distinguishing characteristic of these farmers was that they owned the land they farmed on: *"2006 or 2007, we bought this property, here. I bought land, no interest in (water service rights?). Only land" and had water security… Our water we belong to the Lower Sundays' River Irrigation Scheme. So we don't have problems with water."* The possession of these two natural capitals gives these farmers an immediate advantage within the agricultural economy. Participants were aware of JVs and provided evidence that they understood the rationale behind them. They shared a personal view of why they believe JVs are unsuccessful:

"…if you remember, we had 3000 hectares of water allocated to us. (in the valley?) That is what we must approach. And that is where the corruption was in this valley. That is where we, as black farmers, are not going to go anywhere. Because we gave 50% of that water we gave to white people, you understand, because of land."

"No, it wasn't distributed properly. Certain people could get access to water. They don't even have farms, but they get access to water. You know what I'm saying? And the way that the water was distributed, OK? Amongst one cultural group, because they're sitting in Bisho, you know, it's not right. They should have advertised, and make it an open game, about this water, but it was kept shut, and certain people, certain agents, got involved in distributing the water."

"You see, also, when there's so many beneficiaries, I mean, because there is a farm that is being sold (in the valley), but there's something like 50 beneficiaries, and at the end of the day - it seems like a lot of money, but if 5 million is to be divided amongst 50, what are you walking away with at the end?"

Data revealed a challenge in how the set aside water that is referred to above was allocated, which disadvantaged certain ethnic groups who are also classified as black in South Africa, and this highlights a limitation of this WAR strategy:

"…Because the water was only distributed through agents that knows people there. You remember, we don't only have one cultural group in the southern part of Africa, especially the Sundays River. Going to PE, going to anywhere here, you are sitting with, I think about three to four different cultural groups. You're sitting with white people, sitting with Xhosa people, you're sitting with Khoi people, and then you're sitting with the Basotho mixed with Xhosa. You know, the mix, the mix factor, and that water was only allocated to Xhosa people."

The data further showed that there was a diversification of income without sole reliance on the farm for sustaining their livelihood:

"Ok, well, we are actually a bit of a complicated story, because we are farming and then we are a land surveying company as well. So we don't actually draw a salary from the farm...We get our salary, we get from the survey (company). OK. Yeah. So what does happen is, like, our Eskom account, our water account, is in the name of the farm. So the farm pays it."

The selection of enterprise was also a significant aspect that surfaced. The farmers are engaged in vegetable farming and industrial hemp in an area that is dominated by citrus farming. This provides them with a niche that offers more livelihood security than in the highly competitive citrus industry that is already saturated. As an emerging farmer, this example serves as an ideal approach to adopt where possible:

"What's this guy doing here?" You know what I'm saying? That is how it is. But we can survive the onslaught of not being part of the mainstream. Let's, let's call it the mainstream." "So it's a good place. From an investment side, it is definitely one of the best investments. Not even the Stock Exchange will give you what this value will give you in. Yeah, in property. And on the vegetable side. That's also a good investment, OK, because how many people have got water to grow? You understand, there's not a lot of people (who have sufficient water for their farming needs). So, they they're not, they cannot farm constantly. You just have to farm, (when you have water) right? You know, so other people cannot do that. We understand we can do that, we can, we have various crops that we put in (that we plant over) various parts of the year. So we're not monocropping, you understand?"

These participants expressed that there is a distinct difference in the level of support that is issued to emerging farmers' JVs and those who are not: *"We don't get support, as people who bought their own farms, you know."*

Lastly, the interview provided valuable insights into a different way of thinking about access to finances for emerging farmers, which is often cited as one of the most significant challenges faced by emerging farmers in and out of JVs. This suggestion is documented below:

"I'm an emerging farmer. Give me emerging rates, right? Give me 0% interest rates."

"we don't want grants all the time. Because if you want grants, all your life, you are never going to go anywhere. No, don't come with the Land Bank, and the Land Bank tells you: "We have to do the whole province." I'm not going to go to ABSA for agricultural money. That's commercial money. Other people are here to make money. The state's responsibility is to make sure that there is enough food produced in this country, so the masses can eat. So that is our main problem: is access to finance, not access to grants, access to Finance. A grant is something that you don't really...(want). Give me 3 grants, and I don't give a dam anymore. No, if I have 3 grants, I mean, what am I worrying for? No. I mean, why am I waking up early then? You hear what I'm saying?"

"Reduce the grants. I would say give quality finance. That is it. Quality finance. 0% interest rates. I mean, look, if you look at the news, American farmers get 0%, (or even) -1% interest rates, where did you get -1% interest rate! We still have to pay out."

4.4 CONCLUDING DISCUSSION

The extent to which WAR arrangements such as JVs and the revitalization of small-scale irrigation schemes have resulted in tangible social, economic and livelihood outcomes for the emerging farmers they are intended for is hinged on a multiplicity of factors in South Africa. Applying a sustainable livelihoods framework provides a lens with which one could analyse the socio-economic and livelihood benefits accrued by emerging farmers in JVs. The results showed that despite emerging farmers having years of farming experience by virtue of growing up in farm labourer families, this did not translate to formal training in agriculture or an educational level above secondary school. The implications of this for their farming decisions are that the potential benefits to be derived from different water allocation reform strategies tend to vary from farmer to farmer. Regarding JVs, the findings indicate that there are various types/modalities of JVs with their own unique arrangements and variations in the emerging farmer partners that constitute them across the two case studies. This diversity of modalities is well documented in the literature on JVs in South Africa.

A common definition for JVs that informs our understanding is that of Anseeuw et al. (2011), who posit that JVS are meant to aid the structuring of agricultural investments in ways that optimize resource use, facilitate knowledge sharing, and promote innovative ways of sustaining agricultural farming systems driven by the political imperative for social inclusion. The findings of the current study reveal that the JVs selected in the study are characterised by one or more aspects of the definition provided by Anseeuw et al. (2011), but rarely all. A JV, for example, may be structured to prioritize knowledge sharing and be designed as a mentorship agreement where the established commercial partner is involved in the partnership solely for the purpose of providing mentorship and building capacity. There is an evident correlation between JVs that are constituted by a collective of beneficiaries, as the emerging farmer partner, and limited or no livelihood outcomes accrued. In these instances, the emerging farmers are particularly vulnerable to being exploited through the JV as the benefits derived from the partnership tend to benefit the commercial partner more. In contrast, emerging farmers who had higher educational levels and some form of formal training in agriculture were less likely to find themselves in situations where they were oblivious to the unfair distribution of benefits derived from being in a JV.

The comparison with one emerging farmer not in a JV revealed a contrasting experience where tangible livelihood assets and outcomes from farming activities were more evident than in many of the JV cases examined. While this single case is insufficient to draw generalised conclusions, it raises questions about whether the strategy of JVs is effective in achieving equity goals. If the political imperative for this kind of WAR strategy is equity, then it is necessary to interrogate how equity is being operationalised in these strategies. The unhealthy co-dependency between commercial partners and emerging farmers on the basis of natural capital in exchange for financial capital presents a concerning reality where the goal of equity becomes compromised by the motives that each partner brings to the partnership. These observations suggest potential merit in further research comparing outcomes for farmers inside and outside JV arrangements, and exploring alternative approaches to meet equity imperatives.

A limitation of the sustainable livelihoods framework raised by Bebbington (1999) is that it does not explicitly address differential conditions, assets and strategies of differentiated groups; thus, additional attention must be given to implications of issues such as ethnicity, class, gender, age and other kinds of social differentiation. Bebbington (1999) further suggests that, for the reason of this limitation, the

sustainable livelihoods framework must be used in conjunction with concepts, tools and modes of analysis used in other fields. We take this into consideration in the context of the literacy and educational levels of the emerging farmers in JVs who become vulnerable based on these social factors. We understand this complexity in the context of the dimension of contextual equity as understood by McDermot et al. (2013). Contextual equity pays attention to contextually relevant factors that impact on people's ability to effectively participate in and influence the distribution of costs and benefits. Our understanding of contextual equity is premised on the argument that context is significant in the pursuit of equity and that equity is situated in contextually contiguous phenomena (Sandel, 1990; Pelletier, 2010). Failure to recognize the vulnerability context of the emerging farmers in JVs, as it pertains to their educational levels and therefore possible absence of a deeper understanding of the nature/structure of JVs will lead to an unbalanced evaluation of benefits.

The challenge of competing interests of actors in the agricultural value chain is equally problematic to the effective implementation of WAR, as the vested interests with which actors come into the arrangements have a bearing on their attitudes towards the WAR strategies. This is evident in the variation of perceptions surrounding the benefits that emerging farmers may accrue from being in a JV. The prevalent theme of 'fronting', which emerged from the data, in which there is a clear exploitation of emerging farmers' natural capital, i.e., water allocated to them by the government, as a means of optimizing their own business (often for export). This fronting mostly occurs under the guise of desiring transformation and strengthening capacity when such goals are not foremost in their production agendas. The relationship between actors such as the traditional authorities, the water users associations and the commercial partners raises concerns around the extent to which power differentials impact the livelihood outcomes that emerging farmers will experience.

Despite evidence of support for emerging farmers from related government departments in the respective case study areas, there appears to be an absence of cohesion between government departments towards supporting emerging farmers in and out of JVs. There is evidence of the Department of Social Development taking an active role in supporting the farming activities of emerging farmers in the Tyhefu Irrigation Scheme study area, which the extension officers of the local Department of Agriculture are unaware of, suggesting a lack of integration. A more systems focused view of the connectivity between support structures would prove beneficial for the implementation of sustainable support.

The diversification of incomes by emerging farmers in JVs is seen to be commonly adopted by farmers with higher educational levels in disciplines other than agriculture, suggesting an awareness that the economic gains from such partnerships are often limited. There is evidence of an understanding that the expectations of the benefits to be derived from such a partnership need to be realistic. The supplementation of on-farm income with other non-farm activities suggests that agriculture alone may not be sufficient to sustain the livelihood of an emerging farmer. The knowledge and acumen to make such decisions require higher-level thinking and exposure to the broader context of the economy, which is limited to a select few emerging farmers due to historic inequities. Findings suggest that in the instances of these JVs, the emerging farmer partners tend to be motivated by other capital asset and livelihood outcome opportunities, such as leveraging off commercial partner social networks to accelerate their own farming goals. In these cases, the JVs and the natural assets that they bring into them are viewed as tools for unlocking other capital assets in the long-term. This differs vastly from JVs, where the beneficiaries that comprise the partnership have unrealistic expectations of what acquiring benefits without considering the long-term nature of farming, as is the case in the farming of citrus. Managing unrealistic expectations, therefore, becomes a key challenge in evaluating the livelihood benefits accrued by emerging farmers in JVs. The issue of financial capital, which is in most instances the predominant setback for emerging farmers and becomes a barrier to entry into the agricultural economy, is mostly

used as a means of keeping emerging farmers trapped in the JV arrangements indefinitely. The context of having to pay water tariffs once a water licence has been obtained would put emerging farmers in a challenging position, particularly in instances where the JV was initiated on land that has not been developed yet. The challenge of being expected to finance EIAs and pay water tariffs when there is no production and therefore profit from the land can be viewed as an equitable distribution of costs. Interventions like the recent revision of the Pricing Strategy for Raw Water Use Charges (SA Gov, 2024) that were approved in 2024 serve as evidence of government attempting to alleviate this pressure on emerging farmers through policy intervention.

Lastly, the concern of an aging population of emerging farmers is commonly cited in literature on agriculture in the rural areas of South Africa. According to Walker and Dubb (2013), in most rural smallholder communities in South Africa, the youth often leave the farmlands in the rural areas to seek employment in the towns. This may pose a threat to sustainability as there will not be enough farmers with suitable agricultural experience to continue the cultivation of crops in the future. This emerged as a challenge in both case study areas, with most emerging farmers in JVs being senior. This highlights the necessity for grassroots capacity building and promotion of agriculture as a livelihood option. The suggestion of introducing career days at schools and community information programs to create more awareness and subsequently train young people in agriculture as a way of ensuring sustainability.

5 CHAPTER 5: GOVERNANCE AND INSTITUTIONAL MEASURES NECESSARY TO SUPPORT EMERGING FARMERS

5.1 INTRODUCTION

The South African government has made great efforts to invest in emerging farmers through mechanisms such as joint ventures (JVs) as a way of contributing to equity imperatives, which are embedded in policy related to the water-land-agriculture nexus. Previously, much of the focus of this investment leaned towards infrastructure and technology dimensions with less attention to the aspect of governance (Whitbread et al., 2011,445). Even in attempts to prioritise equity through governance and institutional arrangements such as JVs, the results have not yielded the intended outcomes (Odume et al., 2022:23). The implementation of JVs as a mechanism of facilitating water allocation reforms within the agricultural sector has proven largely unsuccessful, as the findings of the study have shown thus far. This highlights the need to investigate governance and institutional measures necessary to support emerging/resource poor farmers at the farm scale, which is a core objective of the current study.

This chapter addresses the question "what governance and institutional measures/systems can be successful in supporting emerging farmers?" To respond to this question, the chapter is divided into three sections. Firstly, we review the successes and failures in achieving equity goals for the four equity dimensions, which we adopt from the multidimensional equity framework presented by McDermott (2013) that has been used extensively in the study. We approach this in two phases, first by evaluating equity goals of relevant reform policies and in study participant responses within the context of the four equity dimensions. The second phase involves an evaluation of JV successes and failures from the viewpoint of emerging farmer responses in relation to the capital assets accrued as a result of being in JVs. These realities are also linked to the four equity dimensions.

The second section of the chapter deals with positioning JVs as a primary institution for achieving equity goals and how they interact with other governance structures and institutional arrangements in South Africa's water-land-agriculture nexus. Here, we take an in-depth look at which government departments within the water-land-agriculture nexus play a pivotal role in water allocation reform (WAR) and which other departments and institutions play tangential roles in contributing towards reform and sustainability. The section then looks at different modes of governance in WAR and JVs and attempts to assess these within the context of the current study.

The last section presents a synthesis of governance modes that may be deemed viable for achieving success in meeting equity imperatives through reforms and associated implementation mechanisms such as JVs. This is deduced from the discussion of governance modes presented in the preceding section. The chapter is concluded with some recommendations for policy and practice.

5.2 SYNTHESIS OF THE SUCCESSES AND FAILURES IN ACHIEVING EQUITY GOALS FOR THE FOUR EQUITY DIMENSIONS

This section explores the four equity dimensions of Joint Ventures (JVs) as an instrument to enable successful water allocation reform (WAR). This section draws from a summative table (Table 12) that presents the 4 equity dimensions, the equity goals that each dimension intends to achieve in the context of the study, which were determined from the policy analysis of related water, land and agriculture policies presented in Chapter 3. The section further views the four equity dimensions through the lens of the

livelihood capital assets analysis presented in Chapter 4. All analyses depicted in both tables (Tables 12 and 13) incorporate data derived from participant interviews conducted in the study. The purpose of the analysis is to distil the effectiveness of JVs as an instrument of WAR from the successes and failures identified from the data. This is presented in a discussion after the tables. The findings presented offer a useful background for the reflections that follow in the subsequent sections.

Table 12. Description of the successes and failures in achieving equity related policy goals based on participant responses related to the four equity dimensions. Superscripts in column 2 are references to specific policy documents listed directly after the table. Superscripts in columns 3 and 4 are data source references to specific interviews.

Equity dimension	Equity-related policy goals	Successes in achieving equity related policy goals	Failures in achieving equity related policy goals
Distributive equity ***How costs, benefits, risks, and burdens are shared among people and social groups due to resource governance, policy, and implementation practices, particularly regarding water in the context of agricultural reform.***	Transfer 30% of agricultural land over 15 years[9]; achieve transformation and equitable water access[1],[2]; redistribute resources to address producer group disparities[5]; provide financial transfers for water resource management charges[3]; share risks, resources, and rewards through partnerships[6],[7]; distribute resources effectively among farmer categories[10]; cover state conveyancing costs for land redistribution[11]; enable proactive land acquisition and redistribution[12]; achieve equitable access to water services and resources[13]; redress past inequities through water reallocation[4].	Self-sufficient and profitable HDI farmers through funding schemes and market access[2]; acquired access to water for productive purposes and redress of past imbalances[5]; participation in export markets through Agri BEE partnerships[5]; sharing benefits through donation of excess produce to needy community members[7]; marketing vegetable products to foreign-owned shops and supermarkets[7]; increased access to resources including water and land[8]; equitable water allocation and improved water security through common pool systems for unused water reallocation[9].	Failed to achieve equitable allocation of agricultural water[6]; agricultural cooperative unable to pay water use charges leading to surrender of water use licenses[6]; failed equitable allocation of water to historically disadvantaged individuals[6].
Procedural equity ***Inclusivity, participation, and representation. Fairness of decision-making processes, including how people participate and how different social groups are represented.***	Enable demand-directed approaches for beneficiary project definition[9]; implement decentralised processes with district-level support[9]; establish structured application processes with adjudication committees[10]; provide online licensing systems for stakeholder interaction[13]; facilitate stakeholder participation in decision-making[7]; create collaborative institutional frameworks[8]; establish procedures for donation offers and land transfer[11].	Access to information and transparency from SRCC about produce destinations[3]; access to information and facilitated market access[4]; compliance audits ensuring safe and fair working environments[4]; undertaken authorisation process for agricultural water use covering 150 hectares[5]; beneficiary status in water allocation reform programmes[5]; compliance with application and registration processes as agricultural cooperative[7]; capacity strengthening and compliance processes[8]; capacity and skills development support to HDIs in JVs[9]; access to policy information with translation and empowerment services[9]; flexible payment plans as economic instruments[9].	Unfairness in decision-making and participation within JV arrangements[5]; JV design fails to accommodate both partners regarding access to information, knowledge, and privilege to determine enterprise operations[5]; farms bought through land redistribution were "captured" in contract agreement drafting[5]; due diligence was conducted, but strategic partner bankruptcy led to the collapse of arrangements[6].
Recognitional equity ***Respect and***	Target historically disadvantaged individuals[3],[9];	Recognitional equity dimension present in vegetable production	SRCC regards itself as the "face of transformation" but

acknowledgement of people's identity, culture, and values. Addresses issues of discrimination, oppression, and exclusion based on identity factors (e.g., gender, race, ethnicity, nationality, or religion).	focus on Black South Africans, women, and youth[2],[9]; recognise cultural diversity[1]; address past discriminatory laws and practices[13]; acknowledge diverse needs and capacities of social groups[9]; recognise water as belonging to all people[13]; enable integrated management for universal participation[13]; consider social and historical factors for project sustainability[7].	outcomes[7]; the company actively employs black people in management positions to represent the black voice in management meetings[8].	lacks a succession plan and existing strategy for managers employed for more than 20 years[5]; limited evidence of recognitional equity achievements across most interviews.
Contextual equity ***Consideration of pre-existing social, technical, economic, environmental, political, and historical conditions that can either enable or constrain effective participation in decision-making processes related to water allocation and agricultural reform.***	Reverse land alienation legacy[8]; address past inequalities and skewed allocation[1] [4]; accommodate existing lawful water uses[13]; consider varied contextual realities of beneficiaries[9]; adapt support to local environmental, economic, and social conditions[10]; align infrastructure development with regional market dynamics[10]; address constitutional land and water rights[11]; recognise pre-existing social, economic, and historical barriers[9].	Sustainable water management for improved water security[3]; skills transfer targeting younger generation and tertiary educated individuals[3]; acquiring access to strategic networks including EIA consultants[5]; contextual equity mechanisms present in JV arrangements[5],[8],[9].	Underutilisation of land meant to address food security, unemployment and sustainable use of natural resources[6]; JV model sometimes yields opposite results than intended[9].

Policy documents referenced in Table 12 (Column 1 & 2): [1]National Water Resource Strategy Third Edition (NWRS-3), March 2023; [2]Water Allocation Reform Strategy (WARS), September 2008; [3]Financial Assistance Policy for Resource-poor farmers, 2004; [4]National Water and Sanitation Master Plan, 2018; [5]National Policy on Comprehensive Producer Development Support, 2024; [6]Eastern Cape Agricultural Economic Transformation Strategy; [7]Policy Framework for the Recapitalisation and Development Programme, 2011; [8]Policy for Land Development Support, 2018; [9]Land Redistribution for Agricultural Development (LRAD), 2001; [10]Food Production Policy, Province of the Eastern Cape; [11]Land Donation Policy, 2023; [12]Proactive Land Acquisition Strategy (PLAS), 2006; [13]National Water Act No 36 of 1998.
Interview respondents references in Table 1 (Column 3 & 4): [1]Emerging farmer in JV - Sundays River Valley; [2]Emerging farmer not in JV - Sundays River Valley; [3]Commercial farmer not in JV - Sundays River Valley; [4]Commercial farmer not in JV - Sundays River Valley; [5]Emerging farmer in JV - Sundays River Valley; [6]Emerging farmer not in JV - Tyhefu; [7]Emerging farmer not in JV - Tyhefu; [8]Key informant; [9]Key informant.

The findings of the detailed policy analysis suggest that many of the policies in the land-water-agriculture nexus have equity imperatives embedded within them. While equity imperatives are in many instances broadly defined in these policies, the analysis indicates that, in many instances, there is a lack of clarity on the equity dimensions that they are meant to address. This gap in clarification contributes to the successes and/or failures experienced by the affected actors, i.e., emerging farmers. Findings also reveal that distributive equity is the most prominent dimension that is prioritised in most policy documents. The asymmetrical distribution of equity dimensions across policy documents raises concerns about the lack of a comprehensive framing of equity. This is a common challenge expressed in literature. Unlike equality, equity needs unpacking so that policies that use it as a defining principle are well understood by both

policy-makers or development planners and those planned for (Dube, 2020). In the context of South African WAR as an example of a reform geared towards equity, it is useful to additionally consider the parameters of equity targets, goal and scale as McDermott et al. (2013) posit. The need to address the related questions of 1) who counts as an equity subject and why? 2) what goals are equity intended to achieve? 3) at what scale is equity operating in?

Based on policy review findings, we see that few policies within the water-land-agriculture nexus are generic in terms of who or what qualifies as an equity target. Most of the reviewed policies are specific about who the target of equity is, i.e., women, youth and previously disadvantaged farmers. The justification for this selection that surfaces in the policies is that these groupings require more support to participate in the agriculture value chain. The issue of equity goals as presented in policy reflects a concerning gap. What is particularly lacking in many of the policy documents is a framework for monitoring and evaluation. Clearer quantitative and qualitative targets, which may enhance precision in monitoring progress towards equity goals, are needed. Regular reporting, which may improve transparency and accountability in equity achievements, is particularly critical if equity imperatives are to be realised. Equally important are participatory channels for soliciting beneficiary or community feedback on achieving equity goals. Lastly, the issue of scale as an equity parameter is seen to differ across the various policy documents and as it pertains to specific sectors. This highlights a need for integration across sectors within the water-land-agriculture nexus to facilitate effective achievement of equity imperatives.

The subsequent table (Table 13) presents results from the analysis of interview responses of emerging farmers that enable one to distil the capital assets accrued to them as a result of being in a JV and links the findings to the four equity dimensions previously described.

Table 13. Five capitals framework analysis of joint venture participation for emerging farmers.

Capital Type	Summary Statement	Enabling Factors	Constraining Factors	Related Equity Dimension/s
Human Capital	Variable access to skills and knowledge development, with limited evidence of capacity to operate independently.	Structured training programs (supervision, management); Access to high-level expertise; Business skills acquisition; On-the-job learning opportunities; Succession planning in some JVs.	Inconsistent and untargeted training programs; Limited skills transfer for independent operation; Continued dependence on commercial partners; Power differentials limiting decision-making; Knowledge concentrated in technical operations.	Distributive and procedural equity Limited distributive equity in terms of adequate capacity to operate independently. Here, procedural equity is also challenged due to the limitations in decision-making that stem from insufficient skills and knowledge development.
Natural Capital	Primary contribution from emerging farmers is water rights, but with limited control over these resources.	Access to water rights; Formal land ownership/lease arrangements; Legitimized ownership through title deeds; Integration of land and water into business structure.	Climate variability threatening viability; Water rights not paired with operational control; "Fronting" practices to access water rights; Land ownership without financial capacity to develop; Vulnerability to losing water rights due to	Distributive and contextual equity The aspect of distributive equity is highlighted through emerging farmer acquisition of water rights through WAR instruments such as the 'set asides.' This dimension is closely coupled with

			payment challenges; Community land ownership deterring investment.	contextual equity as water rights are exclusively granted to emerging farmers on the premise of their historic disadvantage. The same historical context makes them vulnerable to exploitation due to financial limitations in honouring payments.
Financial Capital	Limited financial capital accumulation with persistent dependency on commercial partners and external funding.	Initial financial support for land purchase; Access to payroll assistance; Loans and grants from industry bodies; Connection to financial institutions through JV partners; Equipment provision through state support.	Inability to access commercial bank loans independently; Inequitable financial arrangements; High operational costs without proportionate returns; Complex profit-sharing that prioritizes reinvestment; Water tariffs during non-productive establishment phase; Accumulation of debt; Limited understanding of agricultural business cycles.	Distributive equity The most prominent equity dimension that is evident is distributive. Findings reveal an unequal sharing of costs, risks and burdens in terms of financial capital for farming operations. Commercial farmers mostly drive the financial processes, while emerging farmers end up accumulating debts that hinder progress.
Physical Capital	Improved access to infrastructure and equipment but often without ownership or control.	Access to handling facilities; Borehole development and maintenance; Infrastructure support from government; Equipment provision (tractors, tools); Access to commercial partners' facilities (packhouses); Solar power installation.	Non-functional or insufficient equipment; Cable theft affecting operations; High costs of renting equipment; Lack of bulk infrastructure connections; Energy disruptions from load shedding; Inconsistent government support; Asset improvements increasing JV value without benefiting emerging farmers.	Distributive equity The unequal distribution of physical capital assets between emerging farmers and commercial farmers depicts a gap in distributive equity.
Social Capital	Expanded networks but with limited decision-making influence within these networks.	Group training programs; Access to farmers' associations; Industry workshops and summits; Family and community support networks; Connections to extension services; Relationships with research institutions for business planning; Community cohesion for addressing challenges (e.g., theft).	Differential access compared to non-JV farmers; Limited transparency about partner activities; Exclusion from industry decision-making; Divisive relationships with extension services; Commercial partners leveraging emerging farmers' status without shared benefits; "Fronting" practices in accessing networks;	Procedural equity The drive to empower emerging farmers through access to and participation in farming related networks can be linked to the goal of achieving procedural equity. Building networks within and across farmer groupings is geared towards strengthening inclusivity that will foster better emerging farmer participation and representation.

		Limited bargaining power within associations.

One of the study's main propositions is that any evaluation of reforms with an equity imperative needs to be attuned to the local realities of the experiences of the intended beneficiaries, i.e., emerging farmers who find themselves in JVs. This viewpoint aligns with literature that conceptualizes livelihoods as encompassing the full extent of economic activities undertaken by people within their social and environmental contexts (Bebbington, 1999). The findings of the capital assets analysis attempt to illustrate this, as we see some documented evidence of success towards this end (shown in the enabling factors column) and seemingly more constraining factors. The constraining factors depicted can be assessed in relation to the equity parameters presented in previous sections, where equity dimensions alone do not sufficiently provide an analytical framework.

There is a need to relate these findings back to the additional parameters of equity targets, scale and goals. Drawing from previous findings from the policy analysis, it is established that the goal of equity in the policy context is mainly redress and the target of equity in some policies is explicitly indicated as emerging farmers. Considering the scale of equity to be the farm scale where the JVs are established, there are evident failures in meeting the equity goals and impacting the intended equity targets in the case of this case study.

Regarding equity dimensions, the findings show a similar bias towards distributive equity as was revealed from the policy analysis. Literature reveals that distributive equity is one of the dominant forms of thinking and of mobilising for equity over the past few decades, rooted in the theories of distributive justice (Schlosberg, 2007; Fraser, 2009). The dimension of distributive equity features dominantly in equity focused policy documents, which mainly focus on how costs, benefits, risks, and burden are shared among people and social groups arising from resource governance, policy, and implementation practices (Leach et al., 2018). The bias revealed in the findings is therefore not uncommon, however highlights the pertinent need for a more nuanced framing of equity to be applied in evaluating how successful governance and institutional arrangements geared towards accelerating equity in the water-land-agriculture nexus in South Africa have been.

In conclusion, the synthesis of the study findings related to the successes and failures of JVs in achieving equity imperatives based on the four dimensions of equity suggests that distributive equity remains the most prioritised dimension. This lopsided focus presents an opportunity to recommend the adoption of a more comprehensive framing of equity if there is any hope of achieving success in meeting equity imperatives embedded in equity focused policy and implementation instruments that can be found in the water-land-agriculture nexus in South Africa.

5.3 POSITIONING JVS AS A PRIMARY INSTRUMENT FOR ACHIEVING EQUITY GOALS AND HOW THEY INTERACT WITH OTHER GOVERNANCE STRUCTURES AND INSTITUTIONAL ARRANGEMENTS IN SOUTH AFRICA'S WATER-LAND-AGRICULTURE NEXUS

In this section, we address two questions: 1) to what extent have JVs facilitated meeting equity goals, considering the equity framework discussed in the subsequent section? 2) how do JVs interact with other governance structures and institutional arrangements in South Africa? We draw from existing knowledge on various vertical and horizontal governance modes to answer the latter question. The discussion is prefaced by a diagrammatic presentation of where JVs fit into the broader context of WAR strategies within the water-land-agriculture nexus. We map WAR instruments, including JVs, and where they fit into the broader scale WAR strategy to contextualise JVs amongst other means of achieving WAR. This visualisation aids in showing the interrelation of different government institutions within the water-land-agriculture nexus and their role in WAR in South Africa.

5.4 DESCRIBING THE GOVERNANCE AND INSTITUTIONAL CONFIGURATION THAT IMPACTS JVS IN THE STUDY

Besides the Department of Water and Sanitation (DWS) and the Department of Agriculture, Land Reform and Rural Development (DALRRD), showcased as the primary role-players in WAR (Figure 11). Other departments play tangential roles, contributing to reform and sustainability in the water-land-agriculture nexus. Interactions between departments through Inter-Governmental Relations and cross-sectoral initiatives are intended to support these high-level objectives. These departments and key roles in WAR include: Cooperative Governance and Traditional Affairs (CoGTA): Coordinates local government water service delivery; Department of Trade, Industry and Competition (DTIC): Supports black-owned enterprises and SMMEs; Department of Forestry, Fisheries and Environment (DFFE): Environmental compliance and ecological infrastructure protection; Department of Mineral Resources and Energy (DMRE): Regulates mining water use and pollution; National Treasury: Financial oversight and infrastructure funding support and; Department of Higher Education and Training (DHET): Skills development and capacity building programmes. We provide a description of predominant water governance configurations and key institutions or decision-making centres in the study areas in which the two case studies are located. The aim in presenting a description of the configuration is to enable contextualisation of the different governance modes explored further in this section.

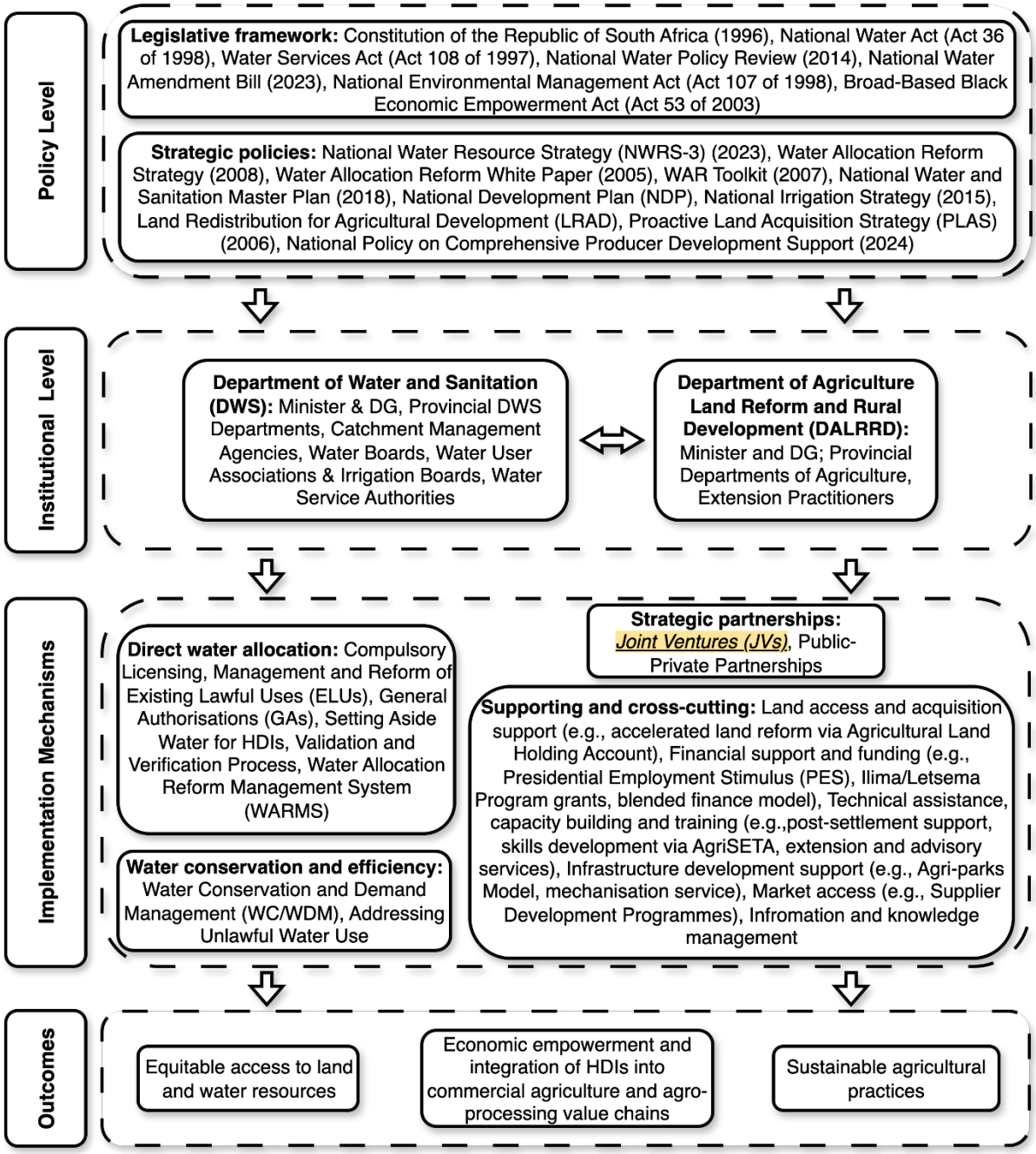

Figure 11: Governance configuration, legislative framework, key institutional decision-making centres and mechanisms and intended outcomes related to water allocation reform in South Africa. Joint Ventures, as one of many implementation mechanisms, are contextualised and highlighted (yellow highlight).

5.4.1.1 Sundays River Valley Municipality

The Sundays River Valley Municipality (SRVM) serves as the water services provider (WSP) and water services authority (WSA) within the catchment. It receives raw water from the Lower Sundays River Water Users Association (LSRWUA) and then treats it before distributing the treated water to the domestic population within the catchment. The SRVM owns and maintains the technical infrastructure for the domestic water supply. The operation of the SRVM is therefore critical for access to the domestic water supply within the Lower Sundays River catchment and overall water resources governance. The SRVM

is mandated by the Water Services Act (Act No. 108 of 1997) (RSA, 1997) to provide water services in ways that are equitable, efficient, and economically sustainable.

5.4.1.2 The Lower Sundays River Water User Association (LSRWUA)

The LSRWUA was established in 1917 as an Irrigation Board, primarily serving the purpose of large-scale commercial farmers requiring irrigation water to grow and sustain their crops (https://sundayswater.co.za/history). However, with the enactment of the National Water Act, Act No. 36 of 1998, the Board was transformed into the current LSRWUA. The LSRWUA is the primary bulk water supplier within the LSRC. The LSRWUA operates and maintains extensive canal systems with which it delivers bulk raw water to a range of water users, including the Sunday River Valley Municipality (SRVM), commercial farmers, the tourism sector, as well as emerging farmers. The LSRWUA sets out several principal and supplementary functions aligned with the provisions of the NWA.

5.4.1.3 Lower Sunday's River Catchment Management Forum (LSRCMF)

The NWA envisaged catchment management forums (CMFs) as grassroots, non-statutory water institutions meant to deepen the democratic space in terms of water resource management. They are vehicles for stakeholder participation in decision-making on water resource management, and serve as the conduit for diverse interests, values, stakeholders, debates, and aspirations. Given that the LSRCMF is not a statutory institution, its objectives are centred around promoting stakeholders' participation in water resources matters, facilitating inclusivity and cooperative governance, as well as providing an avenue for influencing decision and supporting the establishment of the proposed Mzimvubu-Tsitsikamma Catchment Management Agency (CMA).

5.4.1.4 Citrus Growers Association (CGA)

The Lower Sunday River catchment supports large-scale commercial irrigated agriculture. The majority of the farmers within the catchment are citrus growers, and the inter-basin water transfer scheme was originally established to support the irrigated agriculture sector. The Citrus Growers Association (CGS), which is made up of both commercial and emerging farmers, can be seen as a powerful and influential stakeholder grouping regarding water resource governance within the catchment. Its primary objective is to represent the interests of the citrus industry and to ensure the profitability and sustainability of the citrus industry (CGA, 2025), considered as the backbone of the Sundays River Valley economy. Given that it is likely to view water governance from a market perspective, where the primary goal is profitability, market penetration, pricing and input efficiency and output effectiveness, its role needs to be balanced by other water management institutions in terms of equity and social justice.

5.4.1.5 Commercial and emerging farmers

The commercial and emerging farmers within the LSRC are a critical stakeholder as they constitute one of the main water user sectors within the valley. Further, the bulk of levies and charges paid to the LSRWUA comes from the farmers within the valley and is thus very influential in the governance of water resources within the catchment.

5.4.1.6 The Ndlambe traditional authority

The Ndlambe traditional authority refers to the traditional leadership structure within the Ndlambe Local Municipality, located in the Eastern Cape province. The study area, which is deemed the location of the

Tyhefu irrigation scheme in the study, falls under this authority. This authority is part of the broader system of traditional leadership recognized and supported by the South African government, playing a role in governance and community affairs within the municipality. Traditional authorities in South Africa are mostly under the leadership of a chief, and in the case of the study area, Ndlambe traditional authority falls under the chieftaincy of Chief Makinana.

5.5 MODES OF GOVERNANCE IN WATER ALLOCATION REFORM AND JOINT VENTURES

Our study reveals a complex interplay of governance modes surrounding water allocation reform (WAR) and joint ventures (JVs) in the water-land-agricultural nexus in the Sundays River Valley, involving an interplay of hierarchical, market, network, and hybrid governance modes. In this section, we briefly describe these modes of governance and draw on interview evidence from JV farmers and key informants with JV related engagement experience on their influence in the Sundays River Valley. Direct quotations from interview transcripts have been coded as KI for Key Informant and EM for Emerging farmer to maintain participant anonymity.

5.5.1 Hierarchical Governance

Hierarchical governance, typified by state-directed command-and-control (Muradian & Rival, 2012), occurs where the state sets policy, regulatory frameworks, and license conditions for water use and land reform initiatives.

- **State-led policy and regulation:** The Department of Water and Sanitation (DWS) is the primary role player in effecting WAR policy implementation. For example, the Ikamva Lethu project, a 586-hectare project, received a water use license, with a critical conditional requirement of *" ... 60% share black ownership. You're not allowed to go below that, because otherwise, we lose our license for the water."* [KI1]. Water User Associations (WUAs), such as the Lower Sundays River Valley Water Users' Association (LSWUA), function as the *"... 3rd tier of water supply. It's the department, and then you've got CMA's [Catchment Management Agency] and then we fall below that."* [KI2]. WUAs are *"strictly guided by the Water Act, and we're very strictly guided by the terms of license that the department issues."* [KI2] In the case of the LSWUA, their input in the licensing process is limited to confirming the capacity to supply water.
- **Government support and interventions:** Government departments like the Department of Agriculture Land Reform and Rural Development (DALRRD) have provided grants, livestock (e.g., 25 boer goats and 15 Brahmans to Enkeldedoek farm in 2017 [EF1]), and infrastructure (e.g., solar systems for boreholes, handling facilities, and dam scooping for Enkeldedoek farm [EF1]). Access to the full array of support available as outlined in the recent National Policy on Comprehensive Producer Development Support (2024) remains a challenge to many farmers. The support is sometimes perceived as insufficient or misdirected. As an independent farmer noted that *"if only they can support us with equipment, with finances... I think that would be more for me, because if you have equipment to work, you can work. And if you have finances, you can buy things and support yourself. But if you don't have those things, how are you going to grow?"* [EF1].
- **Challenges in state implementation and capacity:** There are significant concerns regarding the DWS's capacity and understanding of the contextual practicalities of implementing WAR policy. The CEO of LSWUA highlighted a *"general misunderstanding on how the system actually works. I've had an issue last week and the week before, with the department where we've sat in*

meetings with various role players, and there seems to be a general misunderstanding on how the system actually works." [KI2] He also expressed frustration that while DWS's *"... intention is correct. It is the practical delivery of those intentions. That is not always practical. I think there's a very, very big lack of capacity within the department."* There are criticisms that appointments to Catchment Management Agency (CMA) boards *"have no connection whatsoever, or a lot of those appointees have got no water experience. They've got no experience on how the water sector works, how the agricultural sector works, so there's accountants, there's a doctor of this and a doctor of that."* [KI2]. This links to a recurring debate on whether CMA boards should be representative, based on member interests, or fiduciary, based on members' expertise (Munnik, 2020).

- **Funding model issues:** At the time of the study, the DWS funding model required water use license holders to *"pay for it, you become eligible immediately."* [KI2] This means farmers, especially emerging ones, must *" ... pay from day one … "* [KI2] even if the land is virgin or undergoing an Environmental Impact Assessment (EIA) process, leading to a *" … debt trap … "* [KI2]. EF2 noted, *"I already paid 750K now, and I haven't even planted a thing. I haven't even de-bushed [cleared the land of existing vegetation] you understand? Imagine, I don't have a partner that is financial, what will happen to me? You see, we are doomed. Doomed, doomed, doomed!"* [EF2]. The LSWUA CEO advocates for a *"user pay principle"* [KI2] where farmers *"pay for what you've used"* [KI2] during the initial, non-productive phases, which in the case of citrus takes up to seven years before yielding its first crop. The recent Raw Water Pricing Strategy, 2024, has addressed this concern stipulating that the *"WRMC (Water Resources Management Charge) for approved resource poor farmers will be phased in over ten years, from the date of registration of the water use, with no charge imposed for the first five years, and the charges will then be phased in incrementally at 20% per annum until the full charge is imposed in year 10."*
- **Limited government power in partnerships:** Once JV agreements are signed, the government's power to intervene in their internal dynamics is *"limited... because those agreements have already been filed/signed."* [EF3] Their primary role becomes *"monitoring the license to check, 'Ok, the conditions which we gave you, are they being successfully implemented? If there's a grievance, does that grievance have any bearing on the actual license itself?'"* [EF3]. Typically, after partnership agreements are signed, JV governance transitions to market governance.

5.5.2 Market Governance

Market governance is the main driver of decision-making, commercial operations of agriculture and the profit-seeking behaviour within many Joint Ventures, often prioritising economic viability and returns on investment. Joint Venture arrangements are structured to favour those with existing market knowledge and financial capital. HDI farmers coming in with limited knowledge, financial and social capital struggled to progress towards agricultural sustainability and self-sufficiency. Our study showed the predominance and influence of market governance playing out in various ways.

- **Profit-driven operations:** Commercial farming, especially citrus, is chosen for its high returns and is therefore highly attractive to HDIs looking to enter the professional agricultural sector, *"You look at the prices they get per tonne, and how much the yield is per hectare. It is phenomenal."* [KI2]. Joint Ventures are largely formed for *"reasons of commerce... not for altruistic reasons … They are definitely there to advance their own commercial agendas."* [KI2]. The Sundays River Citrus Company (SRCC), for instance, transitioned from a co-op to a company in 2002, with its core business being the *"packing and export of fruit."* [KI1]

- **Financial pressures and challenges:** A senior financial manager at the SRCC explains how the citrus industry has faced significant challenges, including *"very high labour cost, and we are unfortunately labour intensive (due to compliance with yearly CISA and global gap audits)* [KI1), low productivity, and *"increasing diesel prices. It went up, I think, about probably 30%. It's difficult to budget for that."* [Frikkie]. He goes on to explain how *"Recent years have been very challenging in citrus"* [KI1] due to low prices. Farmers like EF5's farm are in *"huge debt... it's about a million Rand in debt... But it's the operational cost of the farm that have run into debt."* [EF5]
- **HDI farmer perceptions of "Double-dipping" and unfair distribution:** One HDI in a JV described a perception of "double-dipping" where SRCC, as a 25% shareholder, also charges *"seventy something (thousand) rand a month, for the services of their production managers and everything that they are doing, whereas they are shareholders, are their partners."* [EF4] This means a significant portion of profits goes to service fees before beneficiaries receive dividends, making the *"structure that we structured from the start was: If there's profits, we first take out 50%... As the company, we take out the 50%, for the operations of the next season. And then, we will take the other 50%, and distribute, and share it: 25/75 (split)."* [EF4] feel unfair.
- **Capital distribution as a power imbalance:** Access to capital is a major determinant of power. An HDI farmer in a JV explicitly stated, *"... someone who is bringing in money, would always have more power... They call the shots."* [EF3] His strategic partner contributes *"... about R81,000,000."* [EF3] giving them significant leverage. Without access to such capital, black farmers face immense barriers as *"... commercial banks cannot fund 100% black projects like ours, because... there is no cash flow... and... we don't have the collateral … This forces us to do, to use a different funding stream. That funding stream is to go to another white person who has all of those, and say, "... look, can you become our partner?""* [EF3].
- **"Squeezing out" black farmers:** The high operational costs and debt lead to aspiring black commercial farmers being *"... squeezed out of farming."* [EF5]. An HDI farmer noted that there are *"... people who are ready to kind of jump in and buy you out."* [EF5].

5.5.3 Network Governance

Network governance involves various multi-stakeholder arrangements, formal and informal groups, and industry associations that influence water allocation and farming practices.

5.5.3.1 Water User Associations (WUAs)

The Lower Sundays Water User Association (LSWUA) acts as an intermediary, holding *"... frequent meetings... and we operate very much on an open door policy and in any relation to water, water policy or water distribution, we act as intermediaries very often between the department and the water user."* [KI2]. The LSWUA manages an innovative water use efficiency system that they term the *"... pool system"* [KI1] where farmers can temporarily transfer excess water for a fee: *"... if you have excess water for this year and my trees are still small, they're not going to use my total water allocation. We then do a temporary transfer into our pool."* [KI2] This system has been *"... extremely effective …"* [KI2], but current DWS license clauses, *"... which stipulates this water that is issued according to this license may not be transferred temporarily or permanently without the issuing authority, giving authority for it to happen."* can *"... hamstring the HDI's as well, because if we could make use of a pool system or even a temporary transfer system."* [KI2]. New raw water pricing regulations and effective water use efficiency functionality provided through innovations such as the pool system hold great potential in transitioning HDI farmers from establishment to eventual full productivity and profitability.

5.5.3.2 Agri-businesses and industry associations

Sundays River Citrus Company (SRCC): As a key player, SRCC supports its BEE farms through *"... training, in terms of mentorship. Supporting, we've got admin staff working for SRCC supporting them."* [KI1,] They also offer *"... farm services. That means smaller growers in the valley, black or white, we can support them. Helping with picking, with spraying… We've got infrastructure to do that. We've got about 3 or 4 farms where we do all the stuff. We do the books, we do the appointments, the spraying, the picking all this, all that stuff."* [KI1]. The SRCC packs and exports fruit for *"... about 80 odd producers"* [KI1].

Citrus Growers Association (CGA): The CGA is involved in projects with financial institutions like FNB, offering grant funding and loans to farmers, such as *"The Jobs Fund with FNB... 40% is grant funding and 60% you get at prime minus 4."* [KI1]. Indeed agricultural cooperatives and farmer organisations can improve farmers' bargaining power and, in turn, their market access to gain better prices for their products (Ma et al., 2023).

5.5.3.3 Farmer Network Groups

Some farmers participate in informal *"... study groups …"* [EF4] that serve as knowledge sharing, problem solving and learning platforms for farmers, akin to Wenger's (1998) notion of a community of practice. Access to these collective learning spaces provides opportunities to empower farmers for innovation (Dolinska & d'Aquino, 2016).

The *"Sunday River Valley Black farmers association. Black growers' association … was recently formed in July 2022"* [EF3] to provide collective representation, administrative support and address concerns. Membership involves a nominal fee, e.g., *"... R500 …"* [EF3] to cover establishment and coordination costs.

However, issues of true representation of HDI farmers within formal collectives, such as the CGA, persist. A Black growers association member mentioned that black farmers were *"... included in letters to Parliament ... without asking you … we were not even notified about that, we didn't know … we are paying to be members of that association*. The letter related to a potential government allocation of *"... 1.5 billion Rand …"* to growers affected by difficult years [EF4] and that association fees were deducted by the Citrus Growers Association. *"... when government sent some delegates to come, then we were called because we had to be there, and I just said: 'No, man.' We didn't know anything. So why didn't you call us when you were writing the letter? So that we can be informed? … you even went to Bisho for this same thing, but we were left out…"* [EF4]. In this instance, network governance has been leveraged for increasing legitimacy when engaging with government, but without genuine HDI inclusion in policy advocacy.

5.5.4 Hybrid Governance

Hybrid governance or multi-level governance involves coordination across different governmental sectors and levels to address complex policy challenges (Allain-Dupré, 2020), such as effecting sustainable water governance (Pahl-Wostl, 2019). It can also play out as a blend of public, private and civil society efforts to achieve social and economic aims (Vakkuri et al., 2021). We are also seeing hybrid governance modes playing out within the structure and operation of the Joint Venture partnerships themselves, blending elements of hierarchical mandates (often from government policy) and market-driven commercial logic. Joint Ventures aim to reconcile hierarchical equity mandates (WAR and Agrarian reform policies) with market efficiency imperatives. However, the resulting hybrid governance arrangements demonstrated in

the JVs explored in this study show reproduced, rather than transformed, power asymmetries. Our data has surfaced numerous tensions emerging from the different governance modes at play. Some of these include:

- Government mandate and commercial imperative: Government policy mandates JVs to promote black land ownership and skill transfer. For example, one joint venture entered a 5-year agreement upon a government condition related to skills transfer, *"... the agreement with the government was (that) the former owner must own 25% back, because he was going to transfer skills to us … as workers so that we can manage the farm in the next couple of years after that.* [EF4]. This hierarchical mandate blends with market logic, as the 25% share ensures the commercial partner has a financial stake, making them *"consider that wherever he's doing something wrong, he's also going to lose 25%."* [EF4].
- Conflicting objectives and power imbalances: While the stated objective is equity and empowerment, the commercial interests of the managing partner often take precedence. This is particularly the case where emerging farmers enter JV agreements with limited agricultural knowledge, financial and market capital. For instance, where their ownership was *"... ownership by name, but not ownership in the true sense, in every aspect … we are partners, and you are doing everything... it's just a partnership in words, but in action, it's not that we are actually partners, if one person is doing more of the things, if one person is making all the decisions."* [EF4]
- Strategic partnerships as an alternative hybrid model: Others described their setup as a *"strategic partnership"* [EF3] rather than a traditional joint venture. In his model, the black entity (100% black-owned) secured the water license first, giving them *"... power and leverage to be able to get a joint venture path."* [EF3] They then approached a commercial partner to provide *"capital... expertise... market linkages... and long-term sustainability."* [EF3] Crucially, their agreement ensures clear separation of asset ownership: *"... you'll always be able to distinguish who owns what here"* [EF3] and *"… should shit ever hit the fan, we can happily go our separate ways."* [EF3] This is a deliberate attempt to avoid the *"... captured for life …"* [EF2] scenario common in other JVs, where the commercial partner *"... owns everything, so if it hits the fan, he walks away with everything."* [EF3]. Another partnership arrangement adopts a similar structure, where the emerging farmer owns 51% of the production entity, and the commercial farmer owns 49%, ensuring that *"... the only thing that will bring us together is that production entity"* [EF2] while maintaining separate underlying ownership.

5.6 RECOMMENDATIONS FOR GOVERNANCE AND INSTITUTIONAL ARRANGEMENTS FOR MEETING SOUTH AFRICAN EQUITY GOALS IN THE LAND-WATER-AGRICULTURAL NEXUS

This concluding section presents recommendations for governance modes that may prove effective to meet the equity imperatives encapsulated in reforms within the water-land-agriculture nexus in South Africa. We draw from a synthesis of the findings on JV successes and failures, and the knowledge base of the various governance modes contextualized in the study in the previous section. The rationale is that by presenting the prevailing governance configuration in the study area, one can use the identified attributes of the various governance modes to explore the degree of applicability within the governance systems in the study area.

5.6.1 Key reflections on modes of governance within the study

The findings highlighted the following governance challenges in the context of JVs evaluated in the study:

- **Policy-practice gaps** exist between the strong equity intentions of the hierarchical policies and the weak implementation capacity of the state. This is a common occurrence across South Africa's post-democratic policy landscape. The National Water Act of 1998 is deemed to be one of the most progressive water legislations in the developing world (Makanda et al., 2022); however, implementation is constrained by systemic and structural barriers in executing strategies to meet the provision of water resources or operationalise infrastructure systems that are already stressed (Adom & Simatele, 2024). This disjuncture poses a challenge to the adoption of a hierarchical governance mode.
- There is **competing logic/intent/premise** between market imperatives for profitability, particularly profitability in an international market context, and the high-level policy goals for transformation. The misalignment of goals that influence action poses a major challenge to achieving equity imperatives. A core aspect of the JV structure is the pairing of the two kinds of farmers that characterize South Africa's dualistic agricultural system. This will influence the adoption of governance mode.
- **Power asymmetries** are evident where commercial farmers are leveraging market governance expertise while emerging farmers rely on hierarchical protections. Lahiff et al. (2012) suggest that in view of these asymmetries, particularly in JVs that are comprised of a community of emerging farmer partners, the role of the state becomes very important. The authors highlight the importance of the role of the state in nurturing, facilitating and building capacities for the ordinary community members so that they can also participate in key decision-making processes, thereby strengthening the internal dynamics of the community with respect to the programme being implemented. This outlook leans towards a hybrid governance model, which incorporates both network and hierarchical modes.

5.7 RECOMMENDATIONS FOR THE FUTURE

The recommendation for the adoption of a hybrid model of governance aligns with the governance concept of polycentricity (Carlisle & Gruby, 2019). Polycentricity as a governance concept can be applied to diverse contexts such as economics, politics, urban studies, and architecture to explain the modes of integration possible and the kinds of (re)organisation of governance that optimise the use of available resources (Odume et al., 2022). Proponents of polycentric governance believe that functional polycentric governance systems are more adaptive because of their design structure, a system that has multiple, largely autonomous decision-making centres (Carlisle & Gruby, 2019). Polycentricity is not just about a diversity of institutions, autonomous decision-making centres that are coordinating among themselves, but it also ought to pay attention to the motivation, aspiration, and collective voices of these institutions (Rauhut, 2017). Considering the recommendation of a hybrid governance model in the previous section based on the issue of power asymmetries within JVs, polycentricity presents an opportunity for the diverse motivations of partners to be considered. In a context where emerging farmer priorities differ vastly from those of commercial farmers, there is value in adopting governance models that will not prioritise one grouping's aspiration over another in seeking to meet equity goals.

We recommend the combination of a polycentric governance model with a comprehensive, multidimensional framing of equity in any efforts geared towards meeting equity imperatives in the water-land-agriculture nexus. This could potentially transform South Africa's agricultural landscape.

5.8 CONCLUSION

The aim of this chapter was to respond to the question *"what governance and institutional measures/systems can be successful in supporting emerging farmers?"* This question surfaced from an ongoing evaluation of JVs in the study as implementation mechanisms for WAR. The broader aim on the study is to investigate governance and institutional measures necessary to support emerging/resource poor farmers at the farm scale in the water-land-agriculture nexus in South Africa. This chapter has attempted to address the question by reviewing the JVs in the study as the primary instrument for achieving equity goals. The chapter further considers how JVs interact with other governance structures and institutional arrangements in South Africa's water-land-agriculture nexus. This was achieved through multiple analysis approaches, first through a policy analysis framework, then through a sustainable livelihoods framework and lastly through seeking to understand the various governance modes and contextualizing them within the study. The recommendation is for the adoption of a polycentric governance model as a potentially useful approach to meeting the equity imperative embedded in policy that impacts the agricultural economy of the country.

6 Conclusion and Recommendations

6.1 INTRODUCTION

This chapter presents the final conclusions and recommendations from the study on governance and institutional arrangements for accelerating equity in the water-land-agricultural nexus. The study examined joint ventures (JVs) as mechanisms for water allocation reform in the Lower Sundays River and Great Fish River catchments. This concluding chapter responds to each of the main study objectives, synthesises key findings from chapters 3, 4, and 5, presents recommendations for policy and practice and suggests future research directions.

6.2 RESPONSE TO STUDY OBJECTIVES

6.2.1 Objective 1: Policy Intent versus Implementation Disparities

To examine the disparity between relevant policy intents and implementation on equity goals via joint ventures within the context of water allocation reforms (WAR) in the Lower Sundays River and Great Fish River Catchments.

The policy analysis in Chapter 3 revealed significant disparities between policy intent and implementation outcomes. Policy-practice gaps exist between the strong equity intentions of the hierarchical policies and the weak implementation capacity of the state. This is a common occurrence across South Africa's post-democratic policy landscape. The National Water Act of 1998 is deemed to be one of the most progressive water legislations in the developing world, implementation is constrained by systemic and structural barriers.

The analysis reveals that most of the documents allude to different dimensions of equity. Distributive equity is mentioned most frequently (10 times) followed by procedural equity (9 times), contextual equity (8 times), and recognitional equity (6 times). However, what is particularly lacking in many of the policy documents is a framework for monitoring and evaluation. Clearer quantitative and qualitative targets, which may enhance precision in monitoring progress towards equity goals are needed.

6.2.2 Objective 2: Enablers and Barriers to Benefits for Emerging Farmers

To analyse the enablers and /or barriers to the benefits intended for emerging farmers via joint ventures. Such benefits may include social, economic, livelihoods and technical know-how.

Chapter 4's analysis using the sustainable livelihoods framework revealed mixed outcomes across the five capital assets:

Human capital: The data revealed limited evidence of knowledge and skills development of emerging farmers through JV participation (e.g., structured training: supervision, management, human resources; business skills: calculating profits, managing costs). Evidence of capacity to operate independently beyond JV arrangements remains weak, suggesting dependency rather than empowerment outcomes. Many emerging farmers still require prolonged mentorship (10+ years) and rely heavily on commercial partners for critical operational expertise and office management.

Financial capital: The issue of financial capital, which is, in most instances, the predominant setback for emerging farmers and becomes a barrier to entry into the agricultural economy, has in several instances resulted in the unintended consequence of emerging farmers becoming trapped in the JV arrangements. The context of having to pay water tariffs (e.g., R750,000 paid before planting) once a water licence has been obtained has put emerging farmers in challenging positions. Some access funding mechanisms through partnerships (Jobs Fund with FNB: 40% grants, 60% at prime minus 4; Land Bank assistance), but exploration of how the new water pricing policy will result in improved financial viability of JV's is yet to be seen and was not apparent during our study period.

Social capital: Expanded networks but with limited decision-making influence within these networks (e.g., Citrus Growers Association, industry workshops, summits; SRCC training programmes; family networks; study groups). Emerging farmers showed awareness of the need to maximise social capital assets to facilitate the acquisition of other capitals, but limited transparency about partner activities and exclusion from industry decision-making remain significant barriers. Farmers not in JVs reported significantly less access to organised networks and associations.

Physical capital: Access to commercial partners' facilities and infrastructure provides benefits (e.g., packhouses, handling facilities, solar power systems; boreholes, tractors, equipment), but asset improvements increasing JV value without quick financial return for emerging farmers represent a key challenge. Many farmers face persistent problems with non-functional equipment, cable theft affecting borehole operations, and high rental costs for machinery (e.g., R900 per hectare for land preparation). Limited bulk infrastructure connections and energy disruptions from load shedding further constrain operations.

Natural capital: Water and land access provided through JVs (e.g., water rights valued at R500,000 to R700,000 per hectare; formal land ownership through title deeds; government land leases; community land arrangements), but differential access compared to non-JV farmers and ongoing dependency on commercial partners limit long-term benefits. Water rights often exist without operational control, and climate variability threatens production viability. There are perceptions that some arrangements involve “fronting” practices where commercial partners access water allocations through emerging farmer partnerships.

6.2.3 Objective 3: Governance Dimensions and Suitability of Joint Ventures

To analyse the governance dimensions and the suitability of joint ventures for realizing equity, efficiency, and sustainability imperatives in the context of water allocation reforms.

The governance analysis in Chapter 5 identified critical challenges that undermine JV suitability for achieving equity goals. We include a snapshot from the data to illustrate these challenges:

Competing logic: There is competing logic/intent/premise between market imperatives for profitability, particularly profitability in an international market context, and the high-level policy goals for transformation. The misalignment of goals that influence action poses a major challenge to achieving equity imperatives. The misalignment of goals that influence action poses a major challenge to achieving equity imperatives. Joint Ventures are largely formed for *"reasons of commerce... not for altruistic reasons... They are definitely there to advance their own commercial agendas"* [KI2].

Power asymmetries: Power asymmetries are evident where commercial farmers are leveraging market governance expertise while emerging farmers rely on hierarchical protections. This creates unequal

partnerships that favour commercial interests over equity objectives. As one emerging farmer noted: *"... when government sent some delegates to come, then we were called because we have to be there, and I just said: 'No, man.' We didn't know anything. So why didn't you call us when you were writing the letter? So that we can be informed? ... you even went to Bisho for this same thing, but we were left out..."* [EF4].

Implementation failures: The implementation of JVs as a mechanism of facilitating water allocation reforms within the agricultural sector has proven largely unsuccessful as the findings of the study have shown thus far. For example, there are systemic issues: *"Lack of governmental support in ensuring a just implementation of the policy e.g., the transformation of Irrigation Schemes to WUA, there has not been a successful inception of WUA in the area because due diligence by government has not followed."* The government's limited oversight capacity compounds these problems, as once JV agreements are signed, the government's power to intervene in their internal dynamics is *"limited... because those agreements have already been filed/signed"* [EF3]. Previous studies have established that JVs *"are already showing signs of collapse"* in the Lower Sundays River catchment.

6.2.4 Objective 4: Governance and Institutional Measures for Supporting Emerging Farmers

To explore governance and institutional measures/arrangements/systems, including polycentricity, necessary to support emerging/resource poor farmers at the farm scale to achieve the imperative of equity.

The study recommends the combination of a polycentric governance model with a comprehensive, multidimensional framing of equity in any efforts geared towards meeting equity imperatives in the water-land-agriculture nexus. This could potentially transform South Africa's agricultural landscape.

Polycentricity as a governance concept can be applied to explain the modes of integration possible and the kinds of (re)organisation of governance that optimise the use of available resources. Functional polycentric governance systems are more adaptive because of their design structure, a system that has multiple, largely autonomous decision-making centres.

6.3 KEY CONCLUSIONS BY CHAPTER

6.3.1 Chapter 3: Policy analysis conclusions

- Significant gap between the equity goals articulated in policies and the actual implementation outcomes in joint ventures and water allocation reform.
- Whilst policies express noble intentions regarding equity, efficiency, and sustainability, the practical implementation falls short due to inadequate monitoring and evaluation frameworks, unclear equity targets, insufficient institutional support, and misaligned governance arrangements.
- Of particular importance is the evident emphasis on inclusion, particularly of emerging farmers. However, discussion on how inclusion might be achieved, or what inclusion might even mean, is limited in the relevant policy documents.

6.3.2 Chapter 4: Livelihood benefits conclusions

- The diversification of incomes by emerging farmers in JVs is seen to be commonly adopted by farmers with higher educational levels, suggesting an awareness that the economic gains from such partnerships are often limited.
- Managing unrealistic expectations, therefore, becomes a key challenge in evaluating the livelihood benefits accrued by emerging farmers in JVs.
- In the instances of these JVs the emerging farmer partners tend to be motivated by other capital assets and livelihood outcome opportunities, such as leveraging off commercial partner social networks to accelerate their own farming goals.
- A more systems focused view of the connectivity between support structures would prove beneficial for the implementation of sustainable support.

6.3.3 Chapter 5: Governance Conclusions

- Current governance approaches fail to address the three key governance challenges: policy-practice gaps, competing logics between market and transformation imperatives, and power asymmetries.
- This outlook leans towards a hybrid governance model which incorporates both network and hierarchical modes.
- In a context where emerging farmer priorities differ vastly from those of commercial farmers, there is value in adopting governance models that will not prioritise one grouping's aspiration over another in seeking to meet equity goals.

6.4 MAIN RECOMMENDATIONS

6.4.1 Establishing rigorous pre-qualification criteria for JV participation

Investing state support and water allocation in JV partnerships without assessing HDI farmer readiness risks sets candidates up for failure and wastes the resources and time of both the state and the prospective JV partners. Not all applicants possess the foundational competencies required to commercialise successfully through JV arrangements.

Concrete recommendations:

- Establish a pre-qualification assessment system evaluating potential HDI farmers' eligibility to participate in JVs before committing state support and water allocation.
- Set minimum competency requirements covering: foundational agricultural knowledge; required literacy and numeracy levels; aptitude to benefit from structured capacity development; and sufficient prior farming or agricultural value chain experience.
- Implement transparent selection criteria prioritising applicants with the greatest potential to commercialise successfully through JV partnerships, promoting effective water allocation reform and agricultural transformation.

- Design assessment processes balancing transformation objectives with viability considerations, ensuring candidates selected have reasonable prospects of achieving profitability through structured capacity development (see Recommendation 6).
- Document the selection rationale for each JV partnership to enable future evaluation of pre-qualification effectiveness.

6.4.2 Developing strong founding documentation for joint venture agreements

JV agreements must be founded on clear and accessible founding documentation that comprehensively outlines the nature of the agricultural partnership, different roles and responsibilities, decision-making structures, projected benefits and risks and timeframe, amongst others as well as how these elements are projected to change over the course of the JV. Furthermore, the JV agreement must establish binding monitoring and evaluation frameworks from inception. The Memorandum of Understanding (MOU) should embed clear metrics tracking HDI competence development across the value chain, including labour relations, full farming operation and commercial efficiency.

Concrete recommendations:

- Include in all JV MOUs a comprehensive M&E framework measuring: HDI training progression and demonstrated competence in large-scale commercial farming; access to credit facilities; market access achieved; participation in key decision-making processes.
- Mandate annual independent audits of JV operations against MOU outcomes.
- Establish a dedicated departmental subcommittee to conduct scheduled audits; interface regularly with JV partnerships; ensure MOU compliance; enable and support corrective interventions where necessary.
- Build compliance oversight into the initial JV registration process with clear consequences for non-adherence.

6.4.3 Addressing power asymmetries through multi-layered governance reform

Power differentials between commercial and emerging farmer partners require active state intervention combined with capacity building and accountability mechanisms. Increased HDI knowledge and skills capacity in relation to all elements of the agricultural value chain will build HDI capability to contribute meaningfully to the farming operation, thereby increasing its power base. Current governance arrangements allow commercial partners to leverage market expertise, whilst emerging farmers remain dependent on state protection.

Concrete recommendations:

- Implement mandatory capacity building programmes for HDI farmers covering agricultural value chain understanding, credit access mechanisms, market entry and management, labour relations and employment law.
- Establish regulatory penalties for JVs failing to meet MOU outcomes after state support has been provided, with graduated sanctions.
- Introduce formal whistleblowing mechanisms enabling HDI farmers to lodge grievances without fear of retaliation, with independent investigation protocols.

- Designate extension officers as boundary agents/mediators equipped to support HDI farmers in navigating JV arrangements, accessing support systems and resolving disputes. Extension officer training specific to JV arrangements and particular agricultural contexts are recommended as a parallel intervention (see Recommendation 7).
- Create a performance incentive system using JV scoring metric based on MOU outcome achievement: one scenario may be that high performers receive proportional water tariff reductions; poor performers pay full tariff. Annual evaluation allows tariff adjustment based on performance scores.

6.4.4 Clarifying expectations on timeframes for profitability and livelihood support

Misaligned expectations on profitability timelines create conflict and disengagement between JV partners. Citrus production requires 7-10 years of establishment before significant returns become evident, but HDI farmers require livelihood benefits from the outset. This requires a dual strategy combining long-term commercial development with interim income.

Concrete recommendations:

- State clearly in JV founding documents the expected profitability timeframe for the specific commodity (7-10 years for citrus).
- Implement a structured approach to diversified farming portfolio within each JV: for example, designate a portion of land (approximately 1 hectare) for annual income-generating activities (e.g., vegetables, fodder crops), generating cash flow during establishment.
- Encourage mixed farming practices combining long-term commercial crops with interim income sources.
- Establish interim support systems ensuring HDI farmers receive livelihood benefits during the establishment phase through wage employment on the commercial operation; share of income from diversified crops; government stipends or grants where applicable.
- Document these arrangements explicitly in JV agreements to prevent future disputes.

6.4.5 Enabling HDI participation in key decision-making processes

Emerging farmers remain passive recipients rather than active participants in operational and strategic decisions. This erodes commitment and perpetuates dependency. While some HDI partners may not have the capacity to contribute meaningfully to decision-making processes initially due to capacity shortfall, their ability and potential to add value will improve through intentional capacity development and exposure to decision-making processes.

Concrete recommendations:

- Establish formal governance structures requiring HDI farmer representation in production planning, financial planning and business development decisions.
- Create regular scheduled forums (minimum quarterly) where HDI partners contribute to strategic and operational decisions with documented input.

- Implement transparent information systems ensuring HDI farmers access production data, financial statements and market information necessary for informed participation.
- Build decision-making participation requirements into JV MOU compliance framework monitored through annual audits.
- Facilitate HDI partner involvement in established commercial farmer learning networks.

6.4.6 Delivering consistent capacity development with independence pathways

Evidence showed current HDI capacity development to be patchy, inconsistent and untargeted. In most instances, capacity development efforts do not build genuine capacity required for either independent operation or HDI partners taking on increasingly more responsibility within the JV partnership. As a result, most emerging farmers remain indefinitely dependent on commercial partners.

Concrete recommendations:

- Develop structured capacity progression frameworks moving from intensive mentorship towards managed autonomy over defined timeframes. Different levels of training will be required depending on the capacity level of the HDI.
- Implement intentional succession planning within each JV specifying: roles HDI farmers will progressively assume; timelines for responsibility transfer; competence milestones required at each stage.
- Provide formal certification or competence assessment at key progression points demonstrating HDI farmer capability.
- Link capacity development progression to decision-making participation and financial benefit increases to incentivise engagement (see tariff reduction scenario presented under Recommendation 3).

6.4.7 Extension officers as boundary agents supporting JV-specific interventions

Extension services currently provide generic support insufficient for complex multi-stakeholder JVs. Currently, extension officers are both underutilised as resources to support land beneficiary farmers (Zantsi & Nengovhela, 2023) and would require JV-specific capacity development to effectively support JV establishment and ongoing operational support. Extension officers can bridge the gap between HDI farmers and state support systems.

Concrete recommendations:

- Provide targeted training for extension officers on joint venture dynamics, support mechanisms, and HDI farmer needs within commercial farming arrangements.
- Designate extension officers as boundary agents with explicit responsibilities to facilitate HDI farmer access to capacity development opportunities; connect farmers with state support mechanisms, including water allocation, agricultural support programmes, and reform tools; and mediate disputes between JV partners.
- Establish regular liaison between extension officers and departmental oversight subcommittees to flag emerging issues requiring intervention.

- Resource extension officers adequately to enable consistent engagement with JV arrangements.

6.4.8 Protecting HDI water rights and preventing farmer displacement

Empirical evidence shows HDI farmers relinquishing water rights to commercial partners due to the financial burden of establishing commercial enterprises. Under previous pricing regimes, farmers paid up to ZAR 750,000 for water before planting a single crop, whilst EIA requirements imposed phase-by-phase costs over 12+ months without income generation. Lacking access to commercial credit under the National Credit Act due to the absence of cash flow and traditional collateral, HDI farmers were forced into partnerships where commercial partners leveraged their financial capacity to demand inequitable equity shares, leading to perceptions of "fronting" expressed by some HDI respondents. This perpetuates historical dispossession despite policy intent.

Concrete recommendations:

- Leverage the Regulator Charge (RC) mechanism established under the revised Raw Water Pricing Strategy (2024) to fund dedicated monitoring of water rights transfers and fronting practices. The Regulator's mandate includes monitoring adherence to water-use authorisations, providing institutional capacity to detect when HDI farmers subordinate or relinquish water rights to commercial partners.
- Establish monitoring thresholds identifying when: HDI farmers lack meaningful income; water rights become transferred or subordinated; commercial partners dominate decision-making; and debt accumulates unsustainably.
- Implement transparent water billing systems separating user categories (Municipal, Industrial/Mining, Strategic, Agriculture) to enable tracking of actual water utilisation versus rights ownership, exposing discrepancies where commercial partners control HDI-allocated water.
- When dysfunction is detected, activate corrective support, including credit intervention through state-owned agencies (e.g., Eastern Cape Rural Development Agency); restructuring of JV financial arrangements; and renegotiation of operational control.
- Establish dedicated institutional support through agencies such as the Industrial Development Corporation (IDC) to manage state grants, provide commercial advice, and act as intermediaries, preventing HDI farmers from being pressured into unfavourable water rights arrangements due to financial vulnerability during establishment.
- Establish HDI buyback support mechanisms enabling farmers to increase their equity stakes in JVs using state credit facilities (e.g., Eastern Cape Rural Development Agency, Industrial Development Corporation), specifically addressing situations where commercial partners claimed disproportionate equity shares (e.g., 25%+ for financial management) by covering upfront water tariffs and EIA costs that are now waived under the revised pricing strategy. This will curtail HDI partners from becoming permanently subordinate to commercial partners.

6.4.9 Alleviating financial burden during the establishment phase and managing debt accumulation

Our evidence showed that HDI farmers faced crippling financial constraints from immediate payment obligations upon water licence award, including Environmental Impact Assessment costs and full water tariffs, despite production not commencing for 5-10 years. This forced reliance on commercial partners

and debt accumulation. The revised Raw Water Pricing Strategy (2024) holds the potential to address these specific vulnerabilities through relief mechanisms, including waivers and phased charging. Implementation of the strategy will require mediation through boundary agents including extension officers, DWS regional staff and related departmental sub-committees combined with complementary support mechanisms suggested in previous recommendations, including performance-based tariff incentives (Recommendation 3), interim livelihood support and diversified farming portfolios (Recommendation 4), extension officer facilitation of state support access (Recommendation 7), and credit intervention through state-owned agencies (Recommendation 8).

Concrete recommendations:

- Leverage the revised Raw Water Pricing Strategy's five-year complete waiver period (2024) where registered and approved resource-poor farmers pay zero Water Resource Management (WRM) charges, Operations and Maintenance (O&M) charges, Depreciation charges, Return on Asset (ROA) charges, infrastructure charges, and waste mitigation charges.
- Establish that this waiver period covers the critical establishment phase for perennial crops (citrus requires 7+ years to first harvest), removing the perverse incentive that previously required payment for water not yet in use.
- Implement the phased charging framework established under the revised pricing strategy (20% per annum from year 6-10) to transition emerging farmers toward full cost recovery only after establishing cash flow, preventing the sudden debt shocks that previously forced HDI farmers to relinquish water rights or accept inequitable partnership terms.
- Establish complementary state support for Environmental Impact Assessment (EIA) costs during establishment, recognising EIA as a policy compliance cost rather than an individual farmer burden.
- Ensure JV MOUs explicitly lock in the revised water pricing benefits for emerging farmer partners, preventing commercial partners from circumventing tariff reductions through alternative cost mechanisms.
- Link water tariff performance incentives (from Outcome 2) to the pricing strategy: high-performing JVs receive additional tariff support or acceleration of phase-in reductions; poor-performing JVs remain on standard phased schedule.
- Monitor debt accumulation across JVs against the baseline established at partnership inception, with corrective support triggered if debt-to-asset ratios exceed agreed thresholds.
- Establish a dedicated credit line through state-owned agencies (Eastern Cape Rural Development Agency) specifically for emerging farmers to cover operational costs during the tariff-waiver establishment phase, ensuring financial viability without excessive commercial partner dependency.

6.4.10 Ensuring fiscal sustainability through progressive cost recovery from commercialised HDI farmers

State support during the JV establishment phase must be balanced against long-term fiscal sustainability. Once HDI farmers achieve profitability and commercialisation, progressive repayment mechanisms should be effected to ensure transformation objectives do not create unsustainable fiscal burdens.

Concrete recommendations:

- Establish profitability-triggered repayment mechanisms for direct state expenditures (EIA costs, infrastructure subsidies, establishment grants) activated only once HDI farmers achieve sustained commercial viability (e.g., defined as three consecutive years of positive net income above a certain threshold (e.g., ZAR 500,000 annual profit).
- Structure repayment as a progressive levy calculated as a small percentage of annual revenue (e.g., 2-5%) rather than a lump sum, ensuring newly profitable farmers are not sent back into debt cycles.
- Set maximum repayment periods (e.g., 10-15 years post-profitability) and caps on total repayment (e.g., inflation-adjusted 100% of original state expenditure) to provide certainty and prevent indefinite obligation.
- Exempt water tariff waivers from repayment obligations, recognising these as a correction of historical inequities in water allocation rather than loans requiring repayment.
- Link repayment obligations to continued water rights ownership, such that HDI farmers who maintain independent control of their water allocations and achieve commercialisation contribute to the sustainability of support mechanisms for future beneficiaries.
- Where either JV partner chooses to sell their shares (with attached repayment obligations), implement the right of first refusal for registered HDI farmers and community trusts. This could be linked to a notification period (e.g., 90 days) and matching rights at the offered price, promoting continued HDI ownership without constraining market values or creating repayment exemptions.
- Establish a ring-fenced fund where repayments from successful commercialised farmers directly finance support for new HDI entrants, creating a self-sustaining transformation financing cycle.
- Build flexibility for hardship provisions where temporary production setbacks (drought, market collapse, disease outbreaks) trigger options to apply for the suspension of repayment obligations until commercial viability is restored.

6.4.11 Developing comprehensive monitoring and evaluation frameworks for water allocation reform equity outcomes

Chapter 3 analysis revealed critical gaps in M&E across WAR policies. Many policies lack M&E strategies entirely (Water Allocation Reform Strategy, Financial Assistance Policy for Resource-poor farmers). Where M&E exists, equity priorities are absent (NWRS3), or frameworks show significant gaps (LRAD). Without standardised equity indicators, transparent reporting mechanisms, or participatory feedback channels, WAR policy implementation cannot be evaluated against equity imperatives. This prevents evidence-based policy refinement and perpetuates the policy-practice gap identified throughout this study.

Concrete recommendations:

- Establish an inter-departmental M&E working group comprising DWS, DALRRD, provincial agriculture departments and water user associations to co-design WAR-specific equity monitoring frameworks. This working group would coordinate with the departmental oversight subcommittee proposed in Recommendation 2.

- Develop standardised equity indicator sets across distributive (resource access, allocation volumes), procedural (decision-making participation, governance representation), recognitional (acknowledgement of HDI knowledge), and contextual (historical disadvantage, capacity constraints) dimensions. These indicators must inform the JV-specific M&E frameworks embedded in MOUs (see Recommendation 2).
- Implement mandatory annual reporting requirements for all WAR implementing agents using standardised templates enabling cross-scheme comparison and trend analysis. Annual reporting should complement the annual independent audits of individual JVs specified in Recommendation 2.
- Establish participatory evaluation mechanisms incorporating HDI farmer feedback through regular (minimum biannual) structured consultations, ensuring beneficiary perspectives inform policy adjustments.
- Commission dedicated research programme investigating practical M&E tool development for diverse agricultural contexts, cost-effective data collection methodologies, and mechanisms ensuring M&E adoption by resource-constrained implementing agents.

6.5 AREAS FOR FURTHER RESEARCH

Our study has contributed to our understanding of WAR mechanism to promote equity in the water-land-agricultural nexus. Building on this research base, the following priority research areas include:

- **Monitoring and evaluation framework development:** Develop practical M&E tools tailored to diverse agricultural contexts in South Africa's water-land-agriculture nexus. Research should include collaboration with agricultural value chain stakeholders and policy makers to promote practical application and as a result should investigate: cost-effective data collection methodologies appropriate for resource-constrained implementing agents; equity indicator operationalisation across distributive, procedural, recognitional and contextual dimensions; mechanisms ensuring M&E adoption by provincial departments, water user associations and extension services; participatory evaluation protocols capturing HDI farmer perspectives; and feedback loops connecting M&E findings to policy refinement processes. This research should produce actionable templates, field-tested protocols, and capacity-building materials enabling immediate implementation.
- **Pre-qualification effectiveness evaluation:** Investigate whether pre-qualification assessment systems successfully predict HDI farmer commercialisation potential and JV partnership viability. Analyse the correlation between pre-qualification scores and subsequent achievement of profitability milestones, capacity development progression, and decision-making participation to refine selection criteria.
- **Polycentric governance comparative analysis:** Document successful polycentric governance examples in agricultural transformation contexts comparable to South Africa. Investigate governance models that balance commercial imperatives with transformation objectives whilst addressing power asymmetries. Analyse institutional configurations supporting multiple autonomous decision-making centres coordinated around equity goals.
- **Gender and youth empowerment pathways:** Examine how water allocation reform mechanisms specifically affect women and youth participation in commercial agriculture. Investigate barriers and enablers unique to these demographics within JV arrangements and broader WAR implementation.

- **Impact assessment of revised water pricing strategy:** Conduct longitudinal evaluation of the 2024 Revised Raw Water Pricing Strategy's effectiveness in reducing financial barriers for HDI farmers. Track whether five-year tariff waivers and phased charging mechanisms prevent water rights relinquishment, enable commercial viability, and reduce dependency on commercial partners. Assess whether pricing reforms reduce fronting practices and support independent HDI farming operations. This research should be prioritised between 5-10 years post implementation of the Strategy (2030-2035).

6.6 FINAL REFLECTION

The study demonstrates that whilst joint ventures represent a mechanism for advancing equity goals in water allocation reform, current institutional and governance arrangements severely limit their effectiveness. The evidence reveals that JVs predominantly serve commercial interests whilst emerging farmers remain marginalised through power asymmetries, inadequate capacity development, and financial barriers that force relinquishment of water rights.

This research has developed eleven evidence-based recommendations addressing the structural failures identified across policy-implementation gaps. These recommendations span pre-qualification criteria for JV participation, founding documentation requirements, power asymmetry mitigation, profitability timeframe clarification, decision-making participation, capacity development with independence pathways, extension officer roles as boundary agents, water rights protection, financial burden relief, fiscal sustainability through progressive cost recovery, and comprehensive monitoring and evaluation frameworks. The recommendations reflect a shift from treating HDI farmers as passive beneficiaries to recognising them as genuine partners in agricultural transformation.

The revised Raw Water Pricing Strategy (2024) provides an intervention that addresses the financial constraints documented in this study. The five-year tariff waiver period and phased charging framework remove the perverse incentives that previously forced HDI farmers to subordinate water rights to commercial partners during establishment phases. However, effective implementation requires the complementary governance reforms and monitoring mechanisms proposed in the recommendations.

The study advocates for polycentric governance arrangements characterised by multiple autonomous decision-making centres coordinated around equity goals. This approach recognises that transformation cannot be achieved through market mechanisms alone but requires active state intervention, robust monitoring and evaluation frameworks, and institutional support systems that balance commercial viability with equity imperatives.

The research contributes to understanding governance and institutional measures necessary to support emerging farmers at farm scale, whilst identifying critical gaps in current monitoring and evaluation practices. The eleven recommendations provide a foundation for policy refinement that moves beyond rhetoric to actionable interventions addressing the specific barriers documented through empirical evidence. However, areas for further research remain, particularly regarding monitoring and evaluation framework development, pre-qualification effectiveness evaluation, polycentric governance comparative analysis, and longitudinal impact assessment of the revised water pricing strategy.

The significance in our study lies in documenting critical elements that constrain Joint Venture effectiveness and where potential lies to strengthen them towards becoming real mechanisms for agricultural transformation. The evidence-based recommendations we provide are geared to enable

delivery of meaningful benefits to historically disadvantaged communities whilst ensuring fiscal sustainability and agricultural productivity within South Africa's unique historical context.

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8 Appendices

We include two appendices in this report. Appendix 1 supplements Chapter 3 (policy analysis focus) and provides the full analysis of the policies selected using the 8-category ethical analytical framework (see Table 4 for the analytical framework). This analysis is provided through two tables, Table 14 and Table 15.

Appendix 2 supplements Chapter 4 (Livelihood and Capital assets analysis focus) and provides the full interview analysis of the five capital assets (Human, Natural, Financial, Physical and Social capital).

8.1 APPENDIX 1

Table 14. Summary of policies that have been analysed using the policy analysis framework for assessing their equity objectives, goals, targets and scale.

Policy	Equity Objectives	Equity Goal	Equity Target	Scale of equity
National Water Resource Strategy Third Edition (NWRS-3) (March 2023)	Redistributing water for transformation; creating effective water sector institutions	To support the developmental path of the NDP that seeks to eliminate poverty and reduce inequality by 2030	Historically Disadvantaged Individuals: Poor people, rural livelihoods, Resource-poor farmers, water for business or and industry, gender and race	Primarily national scale with consideration of international agreements.
Water Allocation Reform Strategy (WARS), September 2008.	Transformation and reformation of skewed and unequitable past water allocation	Promote equitable social and economic development with a special focus on women and Black South Africans.	Women, Historically Disadvantaged Individuals	Multi-scale. National, Provincial, District and Local scale
Financial Assistance Policy for Resource-poor farmers	Promote initial access to irrigated agriculture; enhance sustainable irrigation development for resource-poor farmers; improve household food security by providing grants and subsidies; provide financial assistance to those who need it most for development and empowerment; ensure real stakeholder consultation, capacity building, and training for	Ensure the objectives of NWA and WAR in terms of redressing past imbalance is achieved including empowerment of historically disadvantaged individuals, and others.	Resource-poor farmers: Farmers who are citizens of South Africa and who are considered as part of the historically disadvantaged population groups.	Local scale, farm scale (water user association), households/community level

	sustainable development towards prosperity.			
National Water and Sanitation Master Plan 2018	Resilient and fit-for-use water supply; universal water and sanitation provision; equitable sharing and allocation of water resources; reduction in future water demand	Effect the NWRS-3 by stipulating specific actions to redress past inequities through the reallocation and use of water.	All South Africans	Multi-scaled. implemented by stakeholders at different levels in the water value chain
National Policy on Comprehensive Producer Development Support	Regulate and guide the provision of support measures to various categories of producers, contributing to the restoration of natural resources and a sustainable, competitive agricultural sector.	Ensure agricultural development support is distributed to address disparities among producer groups, with priority to the most vulnerable, and promote inclusive participation in the agricultural sector, leading to a more equitable distribution of the benefits of agricultural development.	Household, smallholder and medium scale commercial producers. Focus on supporting youth and vulnerable groups (women, persons with disabilities).	Multi-scale: national, provincial, district and local.
Eastern Cape Agricultural Economic Transformation Strategy	Facilitate partnerships between smallholder, subsistence/communal, and commercial farmers or investors from all sectors through investment to turn smallholders into agro-entrepreneurs and subsistence and communal farms into profitable businesses.	The strategy is underpinned by 7 principles aimed at increasing the sector's contribution to GDP and employment in the EC.	Smallholders/subsistence and communal farmers	Local scale. Rural communities

Policy Framework for the Recapitalisation and Development Programme of the Department of Rural Development and Land Reform	Increase food production to guarantee food security; graduate small farmers into commercial farmers; create employment opportunities within the agricultural sector; establish rural development rangers.	Equity goal not explicit. Problem statement indicates that the primary goal of land reform is achieving equitable land ownership among the country's citizens.	Emerging farmers, land reform beneficiaries	Local scale: Municipal commonages, irrigation schemes, communal farms, land reform farmers
Policy for Land Development Support of the Department of Rural Development and Land Reform	Assist Black farmers to be sustainable, reach full production capacity, and develop their agricultural enterprises to be commercially viable; contribute to the acceleration of the participation of Black farmers in the agricultural value chain.	Develop a coordinated and collaborative institutional framework among stakeholders that will enable black farmers to effectively contribute towards a higher rate of agricultural production.	Black subsistence farmers, medium to large-scale commercial farmers who have been farming commercially at various scales, but disadvantaged by location, land size will be supported through grant funding	Multi-scale. National, Provincial, District and Local scale
Land Redistribution for Agricultural Development:	Increase access to agricultural land by Black people (Africans, Coloureds, and Indians); contribute to the redistribution of approximately 30% of the country's commercial agricultural land (formerly 'white commercial farmland') over the duration of the programme.	Promote equity in agricultural land access for historically disadvantaged groups, specifically Black South Africans, women, and youth; empower them by providing opportunities for agricultural activities, from subsistence farming to commercial ventures; rectify historical injustices in land ownership and economic opportunities; promote sustainable development and self-sufficiency within these communities.	Black South African citizens (including Africans, Coloureds, and Indians; addressing historical land distribution imbalances); Women (ensuring gender equity; targeted for at least one-third of land resources); Young People (creating opportunities in rural areas; enhancing economic independence through agriculture); Rural Dwellers (improving livelihoods through access to agricultural land); Labour Tenants and Farm-workers (transitioning from workers to farm owners; improving economic status); Individuals Farming on Smallholdings (expanding or formalising agricultural activities; scaling operations); People in Communal Areas (optimising land use;	Multi-scale. National, Provincial, District and Local scale

			lacking resources to make productive use of land).	
Food Production Policy. Province of the Eastern Cape. Department of Rural Development and Agrarian Reform	Improve food and nutrition security in the Province; encourage and support partnerships between smallholder farmers and private investors; increase the capacity and capabilities of subsistence, smallholder farmers to become commercial farmers contributing to the economic growth of the Province.	Subsidies and financing for diverse agricultural needs; Provision of genetic material and infrastructure improvements; Establishment of applicant adjudication committees for decision-making regarding agricultural support (no mention of inclusive nature or stakeholder representation on these committees); Support measures adapted to local environmental, economic, and social conditions based on food insecurity data; Infrastructure development based on specific requirements of production systems and regional market dynamics; Provision of tools, inputs, and technical advice; Technical support, capacity	Households/subsistence and users of public institutions; Smallholder farmers; Commercial farmers	Provincial and Local scale. Provincially focussed but at a household to commercial farm scale.

		building, mentoring, and skills transfer to farmers supported by extension services (no mention of capacity building of extension services).		

Land Donation Policy 2023	To achieve sustainable and inclusive development, efforts should focus on increasing land ownership opportunities for farm dwellers, labour tenants, small families, cooperative farmers, the landless in informal settlements, women, youth, and people with disabilities; Promoting primary shelter with proximity to employment opportunities, including agricultural allotments, urban agriculture, and agri-villages; Contributing land for facilities for incubation of youth and new entrants, as well as enterprise development and innovation centers; Providing a framework for responding to the various forms and configurations in which land donations are made; And Providing for the formal processes and institutional arrangements through which donations are to be managed.	Donations amongst several other strategies to redistribute land from large landholders; play socially unifying role and contribute to nation building	Previously disadvantaged South Africans above the age of 18 (women, youth, unemployed agricultural graduates, persons living with disabilities)	Multi-scale. National, Provincial, District and Local scale
Proactive Land Acquisition Strategy (PLAS) 2006	Aims to accelerate the acquisition of quality, well-allocated agricultural and other land to advance fulfilment of State obligation in terms of Section 25 of the Constitution, as well as the objective of contributing to the decongestion of communal areas, secure on or off-farm accommodation and create sustainable livelihoods.	The implementation of the Proactive Land Acquisition Strategy (PLAS) will contribute to a higher path of growth, employment and equity by (then) 2014; Accelerate the land redistribution process; Improve the identification and selection of beneficiaries and the planning of land which people would be settled. Ensure maximum productive use of land.	Black people (Africans, Coloured and Indians) groups that live in communal areas and black people with the necessary farming skills in urban areas, people living under insecure tenure rights.	Multi-scale. National (Housing, DWS, COGTA, SALGA) Provincial, District & Local Municipalities and farm scale

National Water Act No 36 of 1998	The main objective is water allocation that redresses the past inequities related to the historical context whereby corrective measures are to be taken in favour of equitable and efficient water allocation that prioritizes disadvantaged individuals in order to achieve transformation.	Promoting equitable access to water; redressing past racial and gender discrimination; Equity is identified as a central guiding principle in the protection, use, development, conservation, management, and control of water.	Resource Poor Irrigation farmers Smallholder farmers Strategic arrangements in the form of JVs involving historically disadvantaged individuals	Multi-scale. National (DALRRD) ProvincialDRDAR) District and Local offices Farm scale
Standard Operating Procedure (SOP) Framework for Comprehensive Support for Agriculture	Facilitate access to funding for disadvantaged farmers and ensure a unified departmental funding approach.	Consistent and fair distribution of grants to beneficiaries within and across provinces. To streamline the implementation and management of the Comprehensive Agriculture Support Programme (CASP) conditional grant and improve its efficacy as well as improve or achieve alignment with the Department of Rural Development and Land reform's Recapitalization and Development programme	Beneficiaries of the Land Reform - restitution and redistribution (LRAD and SLAG) sub programs. Individual black farmers who acquired land privately (without government grant); Share equity projects where new farmers or farm workers are acquiring shares in agricultural enterprises; black farmers leasing commercial land on a medium-term basis i.e. 5 years and above. Farmers on viable units under communal tenure system. Youth, the disabled and women in agriculture; and new agro-industries will receive priority.	Provincial office of the Department of Agriculture
Standard Operating Procedure (SOP): Community	Redistribution of resources based on need, priorities and historical discrepancies that can enable or	Number of women livelihood initiatives supported.	This SOP target women	Community level Irrigation Scheme level

Development Initiatives	constrain people from effectively participating in decision making	Number of people benefited from poverty reduction initiatives.		

Table 15. Summary of analysis of policy in terms of equity dimensions, mechanisms, intended outcomes and monitoring and evaluation

Policy	Equity Dimensions	Equity Mechanisms	Intended Outcomes	Monitoring, evaluation, learning
National Water Resource Strategy Third Edition (NWRS-3) (March 2023)	Consideration of distributive (emphasis on transformation and equitable access), procedural (focus on greater inclusion and stakeholder input - less specific about who and how) and contextual equity (general recognition of past inequality, context of those previously disadvantaged and cultural diversity) is evident. No clear evidence of recognitional equity.	Implementation mechanisms include: Utilizing NWRS-3 as the legal framework for NWA and Water Services Act compliance; achieving equity and redistribution through authorisation processes, water allocation reform, compulsory water use licencing financial support for emerging farmers, and local economic development initiatives; aligning Water Allocation Reform with improvement mandates; addressing legislative and policy gaps via amending NWA and WSA through separate bills.	Access to water and sanitation for all South Africans; availability of water to support economic growth and job creation; protection of existing assets; stimulation of the construction sector, including small and medium-scale enterprises; protection of water resources for current and future generations; allocation of water for HDIs for basic services and economic benefit; provide for the establishment and transformation of institutions to assist the DWS in giving effect to its core mandate – the development, protection, conservation, and allocation of water resources, and regulation of water and sanitation services and water use.	Little evidence

Water Allocation Reform Strategy (WARS), September 2008.	Focus is on distributive equity, little information about contextual and procedural equity. Recognitional equity is well considered given SA's past.	General authorisation (GA) in terms of the NWA, may be gazetted for specific catchments for the allocation of water resources to HDI users; water may be set aside in specific catchment for water allocation to HDI users; business enterprises using water as a productive asset; meaningful partnership initiatives, such as Joint Venture initiatives and Public Private Partnerships; Compulsory licensing which is the process where all the water uses in an area are reviewed and water is reallocated according to specific imperatives (e.g., fairness), needs and requirements; development support for WAR beneficiaries; strategic alignment with other national initiatives.	The outcome of WARS is to give effect to the legislative imperative to achieve redress and equity as stipulated in the National Water Act, National Water Resource Strategy Section 2 of the Strategy states that the long-term national redistributive target of 60 % to be allocated to the historically disadvantaged so that they can improve productivity and contribute more to the mainstream economy.	No M&E strategy was outlined. Performance indicators have been identified as targets; Implementation challenges hindering monitoring; Recent data shows only 2% water allocation to Historically Disadvantaged Individuals; Majority of water use applications from population already benefiting from historical privileged without redress or equity demonstration.
Financial Assistance Policy for Resource-poor farmers	Distributive equity: Transfer of funds to pay for water resource management charges to water user associations on behalf of resource-poor farmers; Risk of financial instability when funds are unavailable; Motivations in resource distribution include efficiency, and fairness; If resource-poor farmers cannot pay charges, the institution might close sluice gates. Recognitional equity: Improving access for impoverished communities to essential resources such as land, water, infrastructure, training opportunities, agricultural inputs, and markets. Procedural equity: The process to qualify for access to water, land, water rights,	A series of subsidies and grants including: Capital cost grant; Operation and maintenance subsidy; Water entitlements grant; Socio-economic studies grant; Management training grant; Rain-water tanks grant.	Actual outcome of this policy: Financial assistance to the RPF programme was discontinued by National Treasury to align government funding initiatives, remove double dipping, and channel funding to active production support departments; The Department of Agriculture, Forestry and Fisheries was identified as responsible for supporting production and became the host for funding; However, departmental mandates limited funding initiatives; Consequently, DAFF could not extend funding to DWS, leading to the programme's end.	Not mentioned in the policy

	and representation from the institution; Compliance through institutional arrangements such as allocation schedules, constitutions, and business plans; The role and power of participants in decision-making are not clearly outlined.			
National Water and Sanitation Master Plan 2018	Distributional equity to achieve transformation in the water sector. The plan seeks to address contextual equity which pays attention to skewed water allocation in South Africa	High-level focus on operationalising the water and sanitation sector with implication for enabling equity. Indirect equity-related mechanisms include: Specifically planning for: Redistribution for transformation (WAR); Managing effective water and sanitation services; Protecting and restoring ecological infrastructure; Creating effective institutions (Catchment Management Agencies and Water User Associations); Building capacity for action; and Amending legislation.	NW&SMP aim to achieve a water secure future and reliable and affordable access to adequate and safe water and sanitation to improve social and economic well-being with due regard to the environment.	DWS has the action to monitor, review, evaluate report on the and update the NW&SMP and submit to Parliament

National Policy on Comprehensive Producer Development Support	Distributive equity by tailoring support according to the needs and vulnerabilities of different producer groups and ensures some level of recognitional equity by targeting specific minority groups for support. Procedural equity has limited consideration, with vague details on participatory processes, while contextual equity receives the least attention, lacking a deep engagement with the pre-existing conditions that may hinder effective participation and benefit from the policy.	Multi-tiered, decentralized coordination system comprising a National Coordination Unit; Provincial Coordination Unit; and District Coordination Unit. Intervention Measures specifically aimed at reducing inequality and improving participation of black producers include enhancing access to finance through financial instruments and credit guarantees, improving access to markets through capacity-building and infrastructure support, and increasing economic participation through transformative agendas like the Agri BEE Charter.	Increased access to resources: (focus on marginalized producers); Enhanced skills and capacities: (emphasis on historically underserved groups); Fair and supportive regulatory environment: (supportive regulations for fair competition); Improved market access and business opportunities: (support for disadvantaged producers); Resilience against disasters: (resilience-building efforts); Reduction of inequalities: (reducing disparities).	Missing are specific equity-focused indicators to track progress and effectiveness of interventions across demographic groups.
Eastern Cape Agricultural Economic Transformation Strategy	Distributional equity: This strategy benchmarks its success on establishing partnerships, characterized by shared risk, resources, and rewards. Procedural equity: The document lacks details on involving the target group in partnership arrangements, leading to unequal power relations and potential exploitation due to information asymmetry. Ideally, local land users should discuss agreement content with funders (government) during the signing process.	Two key programmes outlined: Commodity Based Commercial Development Partnership Programme (transformation through partnership with industry associations and established development companies); Cluster Based Commercialisation Partnership Programme (partnership between commercial farmers and clusters of smaller farming entities to enhance commercial viability and market access)	Enhanced Skills and Capacities: Training and capacity building to empower all producers, focusing on historically underserved groups.	Cooperating with the M&E Unit of DRDAR for set commodity targets; Quarterly and monitoring reporting against output targets; Annual evaluation for outcome assessment; Impact evaluation after 3-5 years.
Policy Framework for the Recapitalisation and Development Programme of	Distributional equity: The policy's strategic partnerships and co-management encompass sharing risks and resources in land use management. Land reform is crucial for redistribution,	Specialized agricultural financing (financial guarantees); DALRAD developed farm selection grading system (provide tailored support); Mentorship program; Varied strategic	Improved Market Access and Business Opportunities: Opening up market opportunities and supporting sustainable business practices for disadvantaged producers.	Not mentioned, except for mention of the development of a manual outlining implementation with delegation framework, exit strategy,

the Department of Rural Development and Land Reform	requiring the state to provide the poor with productive assets. Recognitional equity: The policy considers social and historical factors to ensure sustainability of projects. Procedural equity: This involves stakeholder participation in decision-making, examining whose interests are included or excluded in natural resource management. Role of land reform beneficiaries unclear but emphasizes the expectations from strategic partners.	partnership development (enable risk sharing, capital investment)		governance, and institutional arrangements.
Policy for Land Development Support of the Department of Rural Development and Land Reform	Procedural equity: Participation in decision-making, requiring farmers and development partners to submit amended business plans for approval. Contextual equity: Reversing the legacy of land alienation that dispossessed the majority of South Africans.	Farm assessments - Farm assessment determines the required support (based on a required comprehensive business plan by the beneficiary within the Black Producer Commercialisation Programme). Departmental deviation process: Any deviation from the business plan must be submitted and approved by the delegated authority before continued implementation.	Resilience Against Disasters: Building resilience among producers to effectively manage and mitigate the impacts of disasters.	Black farmer and development partner submit monthly progress reports to relevant Directorate; Reports tabled for consideration at Provincial Project Steering Committee chaired by Chief Director; Chief Director validates and routes reports to National Office: Recapitalisation and Development; Approved reports submitted to the National Treasury by Deputy

				Director General before month end.
Land Redistribution for Agricultural Development:	Distributive equity: Redistribution of 30% of agricultural land over 15 years to HDIs, targeting the rural poor, women, and young people. Procedural equity: LRAD uses a demand-directed approach, allowing beneficiaries to define their projects. Decentralised implementation and district-level staff assistance support. Recognitional equity: The sub-programme recognises diverse needs and capacities of different social groups by allowing flexibility in grant usage based on their objectives and resources. Contextual equity: LRAD considers varied contextual realities of potential beneficiaries.	Direct Grant Access (providing financial support for individual agricultural projects); Flexible Contributions (allowing varied contributions in cash, kind, or labour based on beneficiary capacity); Group Applications (supporting collective enterprise through pooled resources); Enhancement of Communal Land Use (improving productivity and economic viability of communal lands); Redistribution to Historically Disadvantaged Groups (targeting black South Africans for land redistribution); Integration with National Development Plans (aligning with broader economic and social objectives); Decentralised Implementation (facilitating local involvement and decision-making); Training and Capacity Building (enhancing skills and knowledge of participants); Monitoring and Evaluation (tracking financial and physical use of resources, assessing project impacts);	Redistribution of agricultural land to historically disadvantaged groups (promoting fair access to land resources for HDIs); Empowerment of women and youth in agriculture (enhancing economic independence, land ownership and opportunities); Sustainable community development (promoting economic resilience and viability through communal and group agricultural projects); Increased agricultural productivity and sustainability (improving the use of land through better management practices and infrastructure investments).	Gaps and areas for improvement: Clearer Quantitative Targets (Enhancing precision in monitoring progress towards equity goals); Regular Reporting (Improving transparency and accountability in equity achievements); no mention of participatory channels for soliciting beneficiary or community feedback on achieving equity targets..

		Legal and Regulatory Support (simplifying land transfer and ownership processes).		
Food Production Policy. Province of the Eastern Cape. Department of Rural Development and Agrarian Reform	Distributive equity: Aims to distribute resources effectively among different farmer groups (subsistence, smallholder, commercial), targeting their specific needs and potential growth. Procedural equity: Establishes structured application processes and adjudication committees for transparent decision-making but lacks clarity on farmer involvement in shaping these processes, potentially undermining procedural equity. Recognitional equity: Recognises diverse farmer needs but lacks explicit integration of local knowledge systems or alternative	Financial support and resources; Access to genetic material, stock and infrastructure; Access to regional market points; Adjudication committees; Acknowledgement of diverse farming needs; Support for diverse production ventures; Development of infrastructure in line with local needs.	Reduced poverty (focusing on rural areas); Improved food security (increased availability and affordability); Land access (fair access for disadvantaged groups, addressing historical inequalities); Economic empowerment (supporting small-scale farmers in commercial ventures); Social inclusion (targeting marginalized populations).	Food Security Directorate and District Directors are responsible for monitoring and evaluation of this policy assisted by the Monitoring and Evaluation unit.

	farming practices, risking oversight of culturally specific expertise. Contextual equity: Adapts support to local conditions, tailoring it based on environmental, economic, and social factors and aligning infrastructure development with regional market dynamics, showing sensitivity to farmers' unique contexts.			
Land Donation Policy 2023	Distributive equity: State and public land for redistribution to prioritized beneficiaries for agricultural, residential, and industrial development; State covering conveyancing costs. Procedural equity: Procedures for responding to donation offers, DALRRD responsible for expediting land acquisition and transfer. A 9-step process flow is described, with government officials and experts facilitating discussions with farm dwellers on donated land to address disputes. Contextual equity: Contributes to equitable land access as per Section 25 of the Constitution, addressing property, land, and water rights. Land donations from agri-businesses, commercial farmers, and mining companies recognised.	Donor-specified beneficiary donations; Government-facilitated land donations according to BSLAP (Beneficiary Selection and Land Allocation Policy); BSLAP specified Municipal and community property acquisition applications (Adjudicated directly by the National Land Allocation Panel).	Contributing to equitable access to land by citizens in relation to Section 25(5) of the Constitution; Contributing to social cohesion and nation building; Contributing to adequate food, shelter, and comfort for all; Upholding corporate good citizenship.	Performance Monitoring and Evaluation is mentioned although without details in terms of activities and responsibilities.

Standard Operating Procedure (SOP) Framework for Comprehensive Support for Agriculture	Distributive equity: This SOP targets CASP grant beneficiaries (see equity target beneficiaries) and therefore explicitly relates to distributive equity. The main purpose of the SOP is to improve the CASP implementation, management and efficiency of the CASP Procedural equity:As the SOP focusses on CASP implementation, management and efficiency it predominantly considers procedural equity. It outlines a set of criteria that beneficiaries should meet to be deemed eligible for CASP. It also advocates for the establishment of Project allocation committees. Two committees are proposed. An internal departmental committee first assesses applications against set criteria, offering feedback and guidance for future improvement to unsuccessful applicants. Applications that meet the criteria receive further support to prepare for evaluation by the Provincial Allocation Committee, which includes members from the private sector, government bodies, farmer organizations, and MAFISA intermediaries. This committee collaboratively determines the value and type of support appropriate for projects, aiming to integrate them into broader economic and market frameworks.	The SOP provides a framework for CASP outlining 6 implementation pillars: i. On-and-off Farm Infrastructure and Production Inputs: This category involves the maintenance and development of essential infrastructure like irrigation systems and storage facilities, and the provision of necessary farming equipment and production inputs. It underscores the need for sustainable development and community inclusion by offering 100% funding for community-utilized infrastructures such as veterinary clinics and dip tanks. ii. Targeted Training, Skills Development and Capacity Building: Full funding is provided for diverse training initiatives that include both practical farm training and more general skills (e.g., bookkeeping and conflict resolution). All farmers, regardless of their initial skill levels, have the opportunity to improve iii. Marketing and Business Development: 100% support available for developing business plans and linking farmers to markets. By focusing on spatial competitiveness and market linkages, the program aims to enhance the *economic viability* of farming	To standardize the implementation and management of the Comprehensive Agriculture Support Programme (CASP) conditional grant, aiming to achieve consistency across provinces. Increase access to funding for previously disadvantaged farmers. Enhance the farming operations of HDI subsistence, smallholder, and commercial farmers.	There are no specific MEL processes outlined or KPIs for equity. However, there are provisions made for monitoring and reporting. During the financial year transfers of the grant will be on condition of compliance with the minimum financial and non-financial reporting requirements as well as the compliance to the Division of Revenue Act.

	Recognitional equity Recognitional equity is only really considered in the prioritization of targeted beneficiaries - previously disadvantaged farmers (with particular priority to youth, disabled and women)	enterprises, particularly for those who are often marginalized in market access iv. Information and Knowledge Management: Utilizing the Agriculture Information Management System (AIMS), aligns agricultural projects with regional agrological potential and enhances decision-making through better data management. v. Technical and Advisory Services, and Regulatory Services: All CASP beneficiaries are to be allocated an extension officer, who should provide tailored support based on the unique needs and conditions of beneficiaries. vi. Financial Services: Creating public-private partnerships to enhance financial support for previously disadvantaged subsistence, small-holder and commercial farmers		
Standard Operating Procedure (SOP) Community Development Initiatives	Contextual equity: Redistribution of resources based on need, priorities and historical discrepancies that can enable or constrain people from effectively participating in decision making. Procedural equity: The SOP mentions that participation and active involvement of management, clients, staff, stakeholders and community representatives in organizational	Summary of the step-by-step mechanisms to achieve equity dimensions/mechanisms. More details on the policy analysis document. Mobilize community: Situational Analysis; Submit Funding proposal: Issue a call for proposals; Receive funding applications: Record Application Letter in the Application Register; Issue acknowledgement	To document the Standard Operating Procedure (SOP) for the implementation of funding for community development initiatives in the Eastern Cape Department of Social Development.	Following are part of the MEL Complete Project visits at various intervals Submit Monthly technical finance and narrative reports

	programme and policy design. A collective responsibility of government, civil society and the business sector to deliver services. Recognitional equity: Accessibility in terms of physical and geographical conditions, time, language and need Responsiveness to social, economic, cultural and indigenous and political conditions (SOP mentions appropriateness) Distributive equity: No one must be excluded based on inability to pay for the service and where fees are charged, a means test should be applied (SOP mention Affordability) Achievement of objectives in a most cost-effective manner (Efficiency and effectiveness)	letters: Draft and issue acknowledgement letters to community/applicants upon receipt of applications for assistance; Perform Desk Appraisal; Assess the applications and schedule a field visit; Conduct Field Appraisal Visit; Perform Participatory Rural Appraisal; Compile Profiling documents of households data and community profiles gathered during social mobilization process; Complete Application Form for funding; Assist community to complete applications for funding; Present & Evaluate the Application; Sign off funding application; Conduct Due Diligence: Verification of physical capital such as access to infrastructure, financial assets, such as savings and access to credit, social assets such as networks of relationships with others, reciprocal obligations that can be called in times of need and political influence; Approval the Business Plan and Sign SLA; Align with Institutional Arrangements; Conduct Pre-implementation workshop; Organize pre-implementation workshop on procurement and requisition procedures in line with the PFMA as well as in terms of the SLA; Conduct Capacity Building; Disburse funds; Conduct procurement as per Procurement Process and approval of the allocation letters; Compile Report and conduct Monitoring & Evaluation; Complete Project visits at various intervals; over the Project		Submit Quarterly report separately Evaluate progress on completed tasks as between the parties

Proactive Land Acquisition Strategy (PLAS) 2006.	Distributive equity: Serves as the core instrument utilized by the state to acquire land in order to further the objectives of the Department's Land Redistribution Programmes. This is achieved through Agri-Parks, One Hectare One Household programme and Strengthening Relative Rights programme. Enables the state to pro-actively acquire and redistribute-quality, well-located agricultural land for redistribution. Procedural equity: Proactive land acquisition must be executed within the ambit of local/district level IDP processes or area-based planning approach. Proactive acquisition is driven by the state but the state can initiate service level agreements with any private or public sector agency to implement the strategy within the area-based approach	Outsourcing projects to the Land Bank for technical support in land use planning, marketing, and extension; utilizing experienced organizations to identify land redistribution opportunities; initiating proactive land acquisition through state-driven efforts and service-level agreements with private or public agencies, including farmer unions and organized agriculture; providing grant financing under the Provision of Land and Assistance Act, 1993, allowing beneficiaries to lease with an option to purchase; funding planning costs, including feasibility studies and infrastructure development, through the Department of Agriculture and CASP for agricultural projects. Targeting of strategically located land for redistribution and tenure reform.	Aims to accelerate acquisition of quality, well located agricultural and other land in order to advance fulfilment of State obligations in terms of Section 25 of the Constitution, as well as the objectives of NDP and of emerging farmers programmes of land. Overall, the outcome is social cohesion through an equitable and democratic redistribution of land and resources, accelerated production and prosperity in the rural and urban areas of South Africa.	The monitoring and evaluation unit will develop indicators for each model identified within the strategy. Currently, in terms of the LRAD, there are streamlined processes of approval in terms of a District Screening Committee and a Provincial Grants Approval Committee.
National Water Act, Act No.36 of 1998	Distributive equity: To achieve equitable access to water that is access to water services, to the use of water resources and to the benefits from the use of water resources. To achieve efficient and effective water use for optimum social and economic benefit. Procedural equity: Clients or appointed consultants who wish to acquire a water use authorisation need to register and apply on the Electronic Water Use Licence Application and Authorisation System (E-WULAAS). E-WULAAS is the online web portal for the submission, processing and authorisation of water use	NWRS sets out the strategies, objectives, plans, guidelines and procedures of the Minister, and the institutional arrangements relating to the protection, use, development, conservation, management and control of water resources within the framework of existing relevant government policy to achieve the purpose of the NWA. (Chapter 2) NWRS is the primary and legal mechanisms implementing and operationalising water across all sectors towards achieving national government's development objectives (equity).	Chapters (1, 7, 8 and 9) where the mandate of DWS is: a) To ensure that the country's water resources are protected, used, developed, conserved, managed, and controlled sustainably and equitably for the benefit of all people. b) As the public trustee of the water resources with the power to regulate the allocation, use, flow, and control of all water in the Republic). To establish suitable water management institutions.	The DWS is obliged by the National Water Act to establish monitoring networks and information systems and report on the status of water resources in the country. The annual National State of Water Report communicates available information on water resources to all water sector stakeholders, including water users (Chapter 14).

	license applications (Chapter 4, section 40). The application procedure is within the new 90 day process for issuance of a license. This online portal allows prospective water users to register free of charge, submit their applications for water uses, and interact with DWS in a secure online environment. The pre-application enquiry process includes: reason for the water use application; main activity that will take place for this application; primary sector related to the activity; detailed description of your intended activity (for example, irrigation crop, irrigation area size, type of irrigation system to be used etc.) and location of the intended activity (nearest town and coordinates nearest to where the activity is/will be taking place, distance from the nearest water resource to where the activity is/will be taking place (in kilometres) (Chapter 4,Section 21-34 & Section 40). Contextual equity: In terms of the historical context existing lawful uses or water rights (large scale water use) authorized under the 1956 Water Act were pulled through to the new dispensation in the form of ELU under sections 32-35 of the NWA as a fourth category of permissible water uses to avoid disruption in the economy.	Decentralization of water resources management via catchment management agencies (CMAs) and water user associations (WUAs) at the local level, which would administer water user rights through registration and licensing. Water use authorisation that ensures the requirements of Section 27 (2) of the Act are met in redressing the deep inequities in the distribution of water. Increasing equity of access by historically disadvantaged individuals (HDIs) to irrigated agriculture, especially commercial irrigated agriculture, without compromising irrigation water use efficiency in the process.		No evidence that strategic partnerships are being monitored and in fact not even listed in the Act. No evidence that water management institutions are being monitored and evaluated.

	Recognitional equity: Recognizing that while water is a natural resource that belongs to all people, the discriminatory laws and practices of the past have prevented equal access to water, and use of water resources; Recognising the need for the integrated management of all aspects of water resources and, where appropriate, the delegation of management functions to a regional or catchment level so as to enable everyone to participate; South Africa was one of the first countries in the world to recognise and legalize the inclusion of the environment as a priority water user with the NWA, reserving an unspecified portion of the in-stream flow to ensure sustained ecological services (Chapter 3) Sustainability and equity principles recognise the basic human needs of present and future generations, the need to protect water resources, the need to share some water resources with other countries, the need to promote social and economic development with water and the need to establish suitable water management institutions to achieve the purpose of the Act (Chapter 7,8& 10).Recognition of existing lawful uses accommodate vested users, who fiercely defended their entitlement under the riparian rights.			

8.2 APPENDIX 2

Full analysis of the five capital assets (Human, Natural, Financial, Physical and Social capital)

8.2.1 Human capital

Evidence of Education, Knowledge, and Skills Acquired Through JVs

Varying degrees of learning and capacity development have occurred through emerging farmer participation in JVs and other farming activities. Skill acquisition through structured training has been beneficial for some, *"We started from Level 1 up to Level 4... everything is there: supervision, management, human resources."* Emerging farmer operational knowledge gaps are compensated by access to high-level expertise, *"We're getting expertise, top-notch expertise."* Others have valued obtaining business skills, *"They taught us how to calculate profits and manage costs."* However, there is a lack of consistency in capacity development across all JVs, *"...training programmes have not been consistent or targeted enough,"*. Some emerging farmers express a need and desire for specific training, *"I think I still need farm management... so I can know what to do."* However, not all farmers have the drive to learn, *"You can't force someone to come to training if they don't want to come."* Some emerging farmers are disgruntled about the state's ability to deliver sustained capacity development and support, *"The government promised equipment and training, but most of it never materialised."* leaving many farmers reliant on JV partners or external support.

Capacity to Operate Independently Beyond JVs

There is evidence of capacity development growth, but the emerging farmers interviewed expressed limited capacity to operate their agricultural business independently. There is still a reliance on the JV partner for prolonged mentorship, *"After maybe 10 years, he would be giving expertise, and I will run with it."* However, state-driven efforts are not yet enough, *"government interventions are not enough to close the gap between emerging and commercial farmers."* Training is not comprehensive, one emerging farmer acknowledged a lack of management skills: *"When it comes to production, finances, everything about the farm... I know nothing."* However, there has been some progress through the JV partnerships, *"We were workers of the farms, and then we became the owners of the farms... Without the experience, we managed with SRCC*."* Although there is still a strong dependence on external expertise to maintain viability, *"...if ever those guys decide tomorrow, let's take our things and go out. They will be left stranded, in 20 years, because they know nothing."*

* SRCC refers to the Sundays River Citrus Company.

Evidence of Human Capacity and Additional Staff

Many emerging farmers rely on JV partners to supplement human capital and expertise, but some progress in building their staff capacity has been made. *"He* (the JV partner) *is bringing operational expertise, and he is also bringing office management into the equation."* The partner provides critical skills and human resources. An emerging farmer described how his growth in capacity is envisioned through on-the-job learning and intentional succession planning,

> *"At first, there will be a senior manager... I will act as the junior manager, just to absorb and get a feel of how the operations will go, because it's quite a huge operation…so the scale of this project… It requires someone that has that knowledge…they have some automation irrigation*

scheme. Just going around the farm, seeing and just being implemented the way it is supposed to be. Senior and junior manager…checking if everything is going well."

In contrast, some of the JV operations are managed predominantly by external expertise, with little intentional mentorship and capacity development of emerging farmer partners, *"We need people who are experienced and can guide us... not just one person running everything."*

Challenges, Needs, and Recommendations

Emerging farmers face challenges related to knowledge gaps, limited decision-making power, and inconsistent support. For instance, the partnerships demonstrate clear power differentials, "*I have to wait on his side to approve things... because he's got the financial money."*

8.2.2 Natural capital

Status of Water and Land Ownership

Emerging farmers participating in JVs have different statuses of land ownership and access to water, often shaped by historical agreements and systemic challenges. A participant received a farm with the assistance of funding from the Land Bank *"...with water rights and it was from the lower Sunday's River Irrigation Board and we all had pack rights in the farm."* Other farmers, such as those in the Focus Group Discussion, lease government-owned land: *"We don't own the land, it's government land"*. One emerging farmer notes how despite having land ownership and access to water, climate variability threatens the citrus production viability,

"Now we've got water rights. And we (have to) pay the water taxes and that sort of thing. In the circumstances where there is a climate that is not conducive to successful farming, which is what we find at the moment, you then find that the Lower Sunday's River Irrigation Scheme, then withdraws water, and you can't do citrus farming without water. Our access to water rights are under threat...without water - we won't be able to farm at all".

Citrus farming is highly technical, and emerging farmers tend to partner with or contract in this expertise to oversee the production aspect which detracts from the sense of ownership. *"Even if you have a black person who owns a farm, it's only a notional owning of the farm, right? Because actually (in the) technical respect, the farm is actually managed by white people."* In one farmer's case the land and water are seen as components of a business upon which the JV is constituted,

"The land is 139 hectares...it's a title deed...you can't separate the land from the business. It goes…hand in hand. So the land is (also) under their name (25% owned by the Sundays River Citrus Company (SRCC)), under the company's name."

The main value that emerging farmers bring to a JV arrangement with a commercial farmer is water rights, beyond which contributions appear to be driven by the commercial partner. *"But what they have got out of me (is) what they wanted, which was the water rights. Now that they've got out of me what they wanted, I'm of no value to them… Water rights are worth a lot of money. Currently they are valued between 500 to 700,000 Rand a hectare"*. Water rights not paired with land ownership limits the viability and perpetuates power differentials in some JVs,

"Those joint ventures at first, were just for fronting, where they will take workers, and say they are beneficiaries, and all that and then they will just get those huge water allocations. Even the beneficiary, the worker doesn't even know he or she is a beneficiary. Number one, you don't have land. Number two, we don't have the financial muscle to establish those lands to be productive".

Clearly ownership arrangements can place emerging farmers in dependent positions, limiting their sense of autonomy and transformation towards commercially viable farmers. In instances where emerging farmers have land ownership, e.g., the community owned land in the Tyhefu Irrigation Scheme, the lack of financial capital to maintain water rights constrained JV viability. Here JV investment partners were reluctant to finance a JV where they lacked control of the land,

"The land belongs to the community. And now, the joint ventures–which are the investors–they see that as a threat to becoming part of such an arrangement. What they would encourage is to just rent that land, do everything else, and just pay the rentals to the community, other than being in partnership… so, (they were concerned that) there would be bullying of some sort in the process… they don't want that."

However, without the financial capital invested by commercial partners in a joint venture emerging farmer viability is at high risk. Interview participants who were emerging farmers not in a JV explain this vulnerability:

"So ja, we never had to buy water. But if your water runs out…then you will have to buy water from the Irrigation Board. Should those farms, whether it doesn't matter what colour/race you are, should that farmer fall behind with their water (payments)… And let's say you're bordering here at six months, you're in arrears. The Irrigation Board is very on your back. Always letters. Shut your water down…They're not shy to, they reduce your water. 25%, 50%, 75%, until it's off. And it's a quick thing, and then all of a sudden you'll get a wealthy, a big farmer, that will phone you and ask you: "Don't you want to sell your farm?" Why? Where is that inside info (from)? To me, there is… (instructions/inside info saying) "this farmer is struggling. He can't pay his bill. Go and offer him whatever.""

There is a clear sense of fragility in emerging farmers becoming sustainable and independent, particularly for those not in JVs lacking substantial financial capital. Struggling emerging farmers outside of JVs that own land with water rights are vulnerable to being bought out by commercial farmers, an unintended consequence of the water and land allocation reform policy intentions.

8.2.3 Financial capital

Despite numerous challenges, some of the emerging farmers experienced notable successes tied to financial support as a result of being in a JV. Farmers have received initial partial financial support to purchase land, *"So the three of us were forming a trust with my family: myself, my wife and our daughter. So each received … R 30,000 in order to enable us to purchase the farm and then we put (in) the balance out of our own pockets."* Other farmers have received financial assistance to pay their staff for agricultural production, *"ECRDA for payroll... assistance for payroll for the workers. I have about six workers during the time of harvest, the workers for harvesting were brought in by orange buyers."*. Others have received loans that require repayment, *"we're getting loans, maybe from CGA (Citrus Growers Association), like (from) the Jobs Fund. There's loans, and there's grants that we are getting. Loans must be paid back, they are not grants."*

However, loans from commercial banks are typically not accessible to Emerging farmers looking to establish independently. One farmer explains their options,

> *"... the funding, subject to what is called the National Credit Act....Which means you cannot give money to someone who can't pay it back. Neither can you give money to someone who does not have the collateral for the debt...That means, by default, commercial banks cannot fund 100% black projects like ours, because, one, we are not yet operating, meaning that there is no cash flow that they can fund from. And secondly, we don't have the collateral that they need to fund. That now forces us to do use a different funding stream. That funding stream is to go to another white person who has all of those, and say, "look, can you become our partner?"*

Apart from access to financial loans, the primary form of assistance provided by the state has been in the form of equipment and production supplies, for instance, one emerging farmer who is a farm manager on a JV farm shared, *"We got two new tractors... from the Jobs Fund."*

Once established farmers note mixed successes. An emerging farmer recalled a brief period of financial stability, noting,

> *"For a short period... the farm was able to break even. In the earlier stages, we needed to put in a lot of capital into the farm of our own - with the support of the Provincial Department of Agriculture. In the middle stages, we didn't have to do that. In the latter stages, where a whole variety of things were not working as was to be expected. Right now, the farm is in huge debt. Well, huge for us, because it's about a million Rand in debt. Now, that is not unusual for farming, because all farming is run on debt-based processes… but the farm itself is paid up. But it's the operational costs of the farm that have run into debt.*

Establishing a new commercial farm requires an Environmental Impact Assessment as well as a water licence, both of which are lengthy processes. Up until recently (revised raw water pricing strategy in 2023), the water tariff is activated as soon as the water licence has been allocated, regardless of whether agricultural production has commenced or not. This has been a significant financial constraint for establishing emerging farmers.

> *But you see the saddest part is that immediately (after) you are granted that water (license), the tariffs goes, you need to pay. The water bill just starts. Remember, you have a virgin land."" (Although the emerging farmer may have the water (water rights), but they lack the financial capital to pay for tariffs therefore still heavily reliant on the established farmer. So, you have to do that EIA… I'm hearing that it takes a year. I already paid 750K now, and I haven't even planted a thing. I haven't even de-bushed. Imagine, I don't have a partner that is financial, what will happen to me? You see, we are doomed. Doomed, doomed, doomed! I was going to sit with that negative, year one, because my EIA is still on…. I think at least there must be a free phase, or while maybe the EIA is being done. It's being in process because its scope after scope, phase after phase. While that time..., at least DWS (Dept of Water and Sanitation) gives you a gap, or cuts your tariffs in half. I'm not saying they must write it off and then wait until the EIA is done."*

This is a financial capital constraint and has been partially addressed through the revised pricing strategy for raw water changes (2023). Other farmers have tried to access a water tariff subsidy to offset this initial cost, *"Yes, there is a subsidy to pay the water resource charges on their behalf, but even that one couldn't materialise."* and in the Tyume River catchment, *"Because they did initially utilise the water for 5 years*

for pomegranate project, but they couldn't pay the water. With the understanding that, for the first five years, they are not supposed to pay, there is a subsidy for that."

In the short timeframe that the JVs have been operational, there has been little evidence of financial profitability.

In the citrus industry, production costs are high. Many of the JV arrangements require significant financial, management and operational input from the commercial partner to maintain viability. In some instances, the commercial partner wears two hats, as a shareholder and as a contracted operational manager. This results in limited financial gain for the emerging farmer partners at this stage of the JV lifespan. A farmer explains the challenge in detail below:

> *"... the accountants are from their companies, and the production manager is coming from their companies, but also we are paying every month for those services. We are paying seventy something (thousand) rand a month, for the services of their production managers and everything that they are doing, whereas they are shareholders. And also, all the produce of the farm is being handled by them, because they have pack houses, and the fruit is also packed by them, and it is also marketed by them. I Think there are only 8 people (emerging farmer beneficiaries) now, who are workers, the rest are outside. Others are working in their own places, but then, when there is profit, out of 75% - all of us will get some dividends. (But the structure of the JV agreement) from the start was: If there's profits, we first take out 50%. As the company, for the operations of the next season. And then, we will take the other 50%, and distribute, and share it: 25/75 (split). And then out of the 75, we will share it as dividends amongst the 47 (beneficiaries/members). Which sometimes now is creating a problem amongst us. As the workers' trust. Because some/most of the people feel like the other partner is double dipping, because we are getting their 25% share. But every month they are getting fees... Yes, and also the amount we are paying. Like no one, like even myself, working here every day, but there's not even an amount that I am getting. (I don't get paid for this work). So… It seems like, and everything, like the packing costs are also more deducted from there, because they are doing the packing of our fruit…The marketing of our fruit, everything is done by them, so we don't actually have any control of anything."*

There is a varied understanding of the true production costs of citrus farming amongst the emerging farmers involved in the JVs leading to misplaced expectations and disgruntlement.

> *"So some of the orchards are very old orchards. They are not producing as much anymore, so we have to pull out some of the orchards. And then replant them, which takes another five years, before we can produce, or you get something to export and get profit out of it. So, you have to wait, but not even wait, because you have to spray those trees, for those years, you have to do everything for the trees, to care for them, so that they can be have(ing) some fruits, without getting anything in return, so that is actually the part that's making the loss, and not all of us understands that, remember. And in our culture, if you own a farm, every time that you see oranges on the trees, you expect money. So, that's the sad part of it. And oranges were sent, oranges were exported, and now when it comes to, you think you are going to get money. You are told that there is no money. There is no dividend, you don't get any, not even one rand out of it, but the farm must just continue again next year. And some of our people don't even understand these grant things. And now, you said there's no money, there stands a new tractor. We've got two new tractors that we got from (the) job's fund... Now you told them there's no money, but there's two new tractors. How did you get*

the tractors? If there's no money? So you are busy, spending our money, on things that are enriching the other partners. Because that's how they understand everything, which is also true, because, even if you want to, now you want to buy this 25%, what will the value of the 25% be now? When the assets are now adding into the value. So which means we will never be able to buy the 25%."

The lack of sustained financial support for emerging farmers to become profitable and overcome the initial high input costs to sustain agricultural operations as well as seasonal disruptions (e.g., drought) affecting production has resulted in many of these farms going into debt.

"We've got (have had) two consecutive very difficult years in the citrus industry, for everyone. So it's not looking good, but now I must go and knock at the government's doors, looking for grants, for - to boost us for three to five years, we cannot get into more debt, in operating the farm. … Now last week I even received a form that says, from them. Can we take a production loan from them? From (contracted management company, also the 25% shareholder of the JV). To operate the business that we are sharing. Can the company take a production loan from them? So that we can operate, and then when there's income, they will deduct their (repayment), and I said: "I must think about this", because we are just finding ourselves deeper and deeper, and at the end of the day, we will never come out of here. Never!".

These debt trajectories are a key constraint to transforming the agricultural sector. *"Instead, what is happening (is that) the aspirant black farmers are being squeezed out of farming. Because they soon get involved in huge debt schemes and there are people who are ready to kind of jump in and buy you out."*

Support received from the state appears to come with a cost for emerging farmers looking to become independent. Two JV emerging farmers expressed their frustration about their sense of inequity of the financial arrangement of the partnership.

"... you take 85 + 50 versus 40 (million), ne? And then (the commercial partner) still wants me to pay for the land, and for the development costs, ne? Out of that 10%, the Community Trust must eat. Out of 10%, ne? And then it gets split, and they still benefit there. But here is where they're making the money on their own farms, ok. And that is why we said this is fronting. It's a scam, because really, you will pick it up in my letter of complaint, you will see."

One emerging farmer laments about this conundrum,

Yes, and we get some implements. We get some infrastructure from the government, and the government is really trying and is helping a lot. And he thinks he's helping, like, we also thought that he's helping us, but actually, it seems like, the help that he is giving, is putting us more in a company well, because we will never get out of here. That's how I feel. Because whatever infrastructure or implements that the government is giving to us, is putting up the value of the factor (of the company), which means it's making the 25% more expensive. And that's why it's advisable, from them, (SRCC), for us to get more grants, because you get more value and (you are) not paying anything out. And the other thing that strikes my mind is that: whatever government is giving us, even if there's nothing that we, as (the) workers trust is getting, except us people, who are working in the business, (are) getting paid every month, but for other reasons, there is nothing that we are getting out of the farm. Whereas they are getting packing costs. They are getting the management fees

every month. And that money is coming out of that 50%. Which doesn't benefit us at all. If you're paying, because there's one guy who's coming here, the production manager, who comes like 3 times a week. The accountant comes like one or two times a month, and the operational manager comes one (once every) in three months. Are we paying for that? And now you're sitting here every day, for 30 days.

And…

"You know what? The problem that you are frustrated with, if legally, it can be investigated, out of all the things that the government have done here, this 25% has been paid off long ago." That's what that guy told me. It's been paid off, out of this government. If you want those 25% in everything that's been brought in this company, it's already paid off long ago. You don't even owe them the 25% And there were even talks now, because the people are fed up, and they wanted to sell the farm, and said it's better to sell the farm, so that everyone can get a share and then we're out. (and) They were even encouraging that. Because again, they would still benefit. They will buy it back."

There is hope for emerging farmers in JVs if the partnerships were constituted in a more equitable manner,

"I think partnerships are also good, when you look at the bright side, or the right side of things, if things are done the right way. If we can be like that. (it will be right/correct/good). If there's a bike here, that we need to operate. And it costs us R200. (You will) Get your R100 in, and I get my R100 in, and it will be fair. And also, if we have a problem, like now, we don't have money, and you do have money… Why don't you put the money in here? Because it's our business, then when we get the money out, when we get profit out of that, we pay back your money."

8.2.4 Physical capital

Physical Capital Related to Water Infrastructure

Water access and infrastructure are critical for enabling agricultural productivity. The data indicates that emerging farmers have some access to these, but persistent challenges remain. Many emerging farmers face difficulties related to boreholes, access to bulk water for irrigation, and theft. One farmer explained, *"I extract underground water through boreholes...it's about ten. But not all working. It's only two ezisebenzayo [working]".* Another respondent highlighted the effects of theft on operations: *"One of the major challenges is cable theft that is affecting the functioning of the boreholes".*

Physical Capital Related to Production Equipment, Tools, and Technology

The lack of functional equipment significantly hampers productivity and reliance on renting equipment as a result quickly cuts into potential profits. One farmer explained, *"The tractors which were necessary were already breaking up; the harvesting machines were not working well". Another added, "To prepare the land on your 1 hectare is costing you R900...Rent a tractor R900...the costs are high".*

Lack of Bulk Infrastructure Amongst Emerging Farmers

No or limited foundational infrastructure hinders emerging farmer establishment. One farmer referred to systemic barriers: *"The first thing you must demonstrate to them is that you have land...then you must prove that you can connect your farm to the bulk infrastructure".* Emerging farmers requiring new connections to the bulk infrastructure then need to hire specialists with the knowledge of the reticulations system to access water, *"They don't know where the bulk pipe is...they have to go to the engineers, give them the pipe layout… they have to learn while the project is already operating".*

Energy Challenges and Opportunities with Solar Power

Energy shortages, exacerbated by load shedding, significantly disrupt farming activities, particularly irrigation. *"When it goes to stage 4, it's fine, but when it's four hours twice a day, it's a nightmare."* Solar power has provided some relief, but currently its application is often limited to specific uses: *"They put a solar system for the pump to pump the water out".*

Government Assistance to Emerging Farmers

Support from government programmes has largely been beneficial in terms of equipment, physical infrastructural and infrastructural maintenance.

> *"...luckily, Agriculture is helping us, and they gave us... The (Dept of) Agriculture helped us to build the handling facility. And they even scrubbed our dam (dam dredging to remove sediment) and the boreholes that were closed and old, but they had to come in and renew them and clean them... And put solar system for the pump to pump the water out."*

Other farmers expressed gratitude for the support they received from the Department of Rural Development and Agrarian Reform.

> *"Department also assisted with tractors. One tractor...Including the tanks. JoJo tanks...so that I can work next year. iClippers, iLadders... bins that you are seeing... spray... they truly helped me... weed cutter."*
>
> And…
>
> *"We have had some support as far as chemicals and (compost) and those sorts of (things). So we have started building those canvas (covers). And that gives it wind barriers as well."*

Others have experiences inconsistent support and have experienced delays or inadequate aid.

> *"I have made a request to the Department of Agriculture for assistance but there has not been any response yet… in terms of the refurbishment of these boreholes…"*

Adoption of Innovation and Technology

Despite resource constraints, some emerging farmers are seeking to innovate to keep up with export market standards. For instance, one farmer spoke of importing specialised machinery:

> *"And they specifically want that. So, we are looking at importing now a machine, because we imported a machine to do the trimming of the hemp. When you harvest it. We sent it (the hemp) for analysis. You get your certificate of analysis…".*

Another noted the benefits of technology for security, using 'robo guards' to protect assets.

> *"We do have 'robo guards', outside, that are motion detectors...It's like a beam, that it picks up motion. It's a motion sensor, so as soon as somebody walks past, it triggers and then it goes off and alarm goes off in our house. So, we can see in which zone the person is in. But then we go out ourselves at night. So, it's my husband, myself, and my son. Then we obviously all, we have to arm ourselves and then we go and try and predict what there is."*

These excerpts show a willingness and effort to utilise sophisticated technology to mitigate against some of the challenges facing emerging farmers. However, wide-scale adoption would require sustained access to financial capital and social capital for the required technical support.

8.2.5 Social capital

Network support for learning and agricultural development

There is evidence of numerous learning, information sharing and agricultural development networks available to emerging farmers in JVs both within and across JVs in the respective case study sites. These exist in the form of group training programs arranged by the commercial partners; *"The SRCC provides general group training for emerging farmers," independent* farmers' associations specifically for black farmers like the Sunday River Valley Black farmers association, educational material presented on radio and television: *"Sometimes other skills I know when I like to listen to the radio sometimes, also I like to watch TV, then I see some of the how they do some…Let's say vaccinations, dipping…Things like that…",* family networks for advice and learning*: "I've got my cousin is in… my cousin is farming by there, but they have everything, and the government is pushing them, is giving them everything they want. That's when I spoke with her about these papers and she said, "Start here. If you start here, then everything will work".* Sometimes family networks are used for sources of labour when there is insufficient capital to pay staff for labour: *"We can't employ. How are we going to pay them? Because what we do, we're using our family members just to help."* And workshops and summits and regional and national scales:

> *"We have summits at PE, we have also ilantuka (what you call) workshops (at) Nestra...These are hosted by the…CGAGDc (citrus growers association growers development company) ...Symposiums…and) Summits." "There is the annual summit...which is for all farmers in the Eastern Cape... Eastern Cape black farmers".*

A notable finding was that farmers who were not in JVs reported not having the same level of social capital and the wealth of exposure to numerous beneficial networks that are meant to add value as presented in the following quotation:

> *"No, none of that. We don't have that, official associations. Ja, they don't cater for us. Look, take these citrus guys, they've got a Citrus Growers Association which is there, you know, and then they've got working groups and those kinds of stuff. They're very organized. We are not."*

These types of emerging farmers showed a sustainability and business mindset in their approach to information sharing; choosing to reserve farming information about their enterprise to themselves as a means of guarding the niche they hope to establish. This relates closely to the notion of the link between farmers' highest level of education and farmer attitudes towards JVs:

"No, none of that. We don't have that, official associations. Ja, they don't cater for us. Look, take these citrus guys, they've got a Citrus Growers Association which is there, you know, and then they've got working groups and those kinds of stuff. They're very organized. We are not."

""Only in Europe, are there the kind of farmers, where, for example you'd come to me, saying:" Why is your butternut looking so good?" (and that information would be shared) ...with the hemp, you keep your cards close to your chest."

Data also revealed the emerging farmers received support from other actors such as related government departments and commercial banks:

"We've got government departments, and we've got the SRCC, and we've got the company. Rural Development and Land Reform. In terms of anyone from the private sector we've got the Citrus Growers Association (CGA), they are also involved. We're doing a project with them now, The Jobs Fund with First National Bank (FNB). And there is also a system there, where you have 40% is grant funding and 60% you get at prime minus 4. And it's a 10-year period project or seven-year period."

Support for business plan development to access future livelihood capitals and outcomes

Data revealed that besides water or land resources the prerequisites for emerging farmers to enter JVs include bulk infrastructure and that they have a business plan. Emerging farmers mostly only have the natural capital and therefore rely on resources available through their social networks to get assistance in developing business plans.

"'barriers to entry for black farmers, slow uptake of the 3000', there I'm saying when you are going to submit a water application to Water Affairs, the first thing you must demonstrate to them is that you have land. It's either you own that land, or you lease that land. Then the second one is you must prove that you can connect your farm to the bulk infrastructure. That means you've got the canal system…and then in some cases, well most cases, they require business plans. And then most importantly you must prove that you have got access to funding."

"So they say yes, there's an extension officer from the department of agriculture with an economist, but in addition, they are now working very closely with Fort Hare University. As a result, sometime last week, they were around. So, they are being assisted with the development of the business plan so that they can also apply to the Department of Agriculture for funding. And now that they have noticed that the co-op is no longer interested because of the (their) previous experiences, they will use that business plan for other potential investors."

"but we're entering into strategic partnership. Because in a partnership, someone brings something that the other does not (have). Exactly. so here it's a strategic partnership."

Social capital towards unlocking multiple other capitals and livelihood outcomes

Emerging farmers in JVs in the study showed their awareness of the need to maximise social capital assets to facilitate the acquisition of other capitals and positive livelihood outcomes. There is therefore a strong sense of social cohesion amongst emerging farmers towards this goal:

"*Yes, now, as a way to break out (away) from those divisions, they have decided to establish this new entity that we once asked about earlier on. To try to mediate and facilitate the development and the revitalization of the irrigation scheme. And now the Department of Agriculture, the Department of Water and Sanitation, the local municipality and the Ward Councillor, they are involved, although the ward councillor at times they are busy; otherwise, at least now there is a light at the end of the tunnel with the initiatives because they have tried to bring (them) together. Or everyone is focused on one objective. So, that is the stand. Now I'm going to sign."*

Community cohesion against theft and other crimes

The issue of theft raised in subsequent sections is rife in communities where emerging farmers in JVs operate. The limited financial capital to invest in security results in a strong sense of community cohesion particularly when fighting crime as there is no functional police service (too far to be of practical value) in some instances such as in the case study of the study area of the Tyhefu Irrigation Board.

"If it is said that the thugs have come, we just blow a whistle and our phones, and get told to come out, get out we'll meet on the road, come we are at a certain, place and we meet each other. Yes, the car will be set on fire. We said that we don't have a police station, the police station is far away, the road is awkward, and there is no transport. We are wrong for taking the law into our hands, but what should we do? We are not safe. During pension days we are worried; if you call the police, it is said there is no transport. We'll sort it on our own, even when they are stealing the produce".

Mutual benefit from JV partner social networks

Both emerging and commercial farmers derive benefit from each other's social networks to progress. The data reveal that in the same way emerging farmers leverage off the established commercial farmers' existing networks to accelerate processes such as the completion of an environmental impact assessment (EIA), commercial farmers also optimise the existing networks that emerging farmers have access to by virtue of being classified as historically disadvantaged. Partnership with an emerging farmer is seen as a strategy to access HDI specific relief funding. Commercial farmers in the Citrus Growers Association use the emerging farmers' status to access government support funding:

"they had a farm in the Free State, and that farm – their EIA was done (applied for) after my farm. But their EIA is done already (EIA application process is finished - it was faster in the Free State)."

"But we have not had support, for the means (of farming?), for example, the spraying machines, the tractors and that sort of thing. That we haven't had support for. So we've had to then (depend) on the managing company to rent us their own. So in the end they benefit twice."

""here's a white individual, entering into partnership with 100% black (owned company) who are capable. So that means for them, they are, they are hitting transformation targets."

"there was letters written to Parliament, by the citrus growers of the valley, they also included us as well in that letter(associated us with that letter) Yes, so the government should have given 1.5 billion because of these two years that has been so bad for us as growers (due to COVID), and we were not even notified about that, we didn't know, and also like, we are paying to be members of that association."

Challenge of lack of transparency

The data identified a common challenge of commercial farmers not being transparent with their emerging farmer partners regarding their use of the emerging farmers' social capital. Commercial farmers are leveraging off the partnership to expand their business without being transparent while emerging farmers do not benefit from these business ventures. This situation is well illustrated by a disgruntled emerging farmer below:

> *"The three white farmers signed the agreement on the 29th of June this year. We know nothing about it." "a second part of fronting… using the company name to go and do business on the side, "*

Support from extension services

The data show there is a support base for emerging farmers from the extension officers in the respective case studies. Extension services differed significantly depending on location with some emerging farmers in JVs indicating that they found the assistance offered very useful to their farming practice and others not. Farmers not in JVs relied on this support more than emerging farmers in JVs, possibly revealing a tangible benefit of being in a JV:

> *"The basic burning issue is this: the extension officer has his own group of people that he was working with. So, by that, the community and the Traditional Authority, was now divided amongst themselves because there are those people that go with the chief (and) there are those that go with the extension officer. And the unfortunate part is that the extension officer is an employee of the department of agriculture. So the department tends to listen to his voice. So even the department of water and sanitation was listening to the extension officer."*