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Policy Brief

Redesigning the Rwanda Crop Intensification Programme (CIP) Subsidy Scheme for Biodiversity and Equity

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Executive Summary

The Rwanda Crop Intensification Programme (CIP) has significantly contributed to increasing agricultural production, the mainstay of livelihoods in Rwanda. However, its current subsidy scheme predominantly promotes the use of inorganic fertilisers and, for some crops, monocropping, which have exacerbated biodiversity loss in Rwanda.

This policy brief proposes a redesign of the CIP's subsidy framework to mitigate its negative ecological impacts while ensuring that key gains, such as in terms of output, are retained and that the process embodies principles of social justice: procedural, distributive, and restorative. By integrating sustainable farming practices and equitable resource allocation, the amended CIP can support Rwanda's agricultural goals while preserving its rich biodiversity.

The CIP is one of three instruments selected for redesign through the application of a rigorous analytical prioritisation and consultative process.[1] The CIP, alongside the Clean Cooking Results-Based Financing scheme and the Tax Incentive for Tourism Sector Investments was found to be among the most important subsidy instruments to review in terms of the value of biodiversity to the Rwanda's economy and society. The instruments – which are interrelated - and their proposed biodiversity and social equity-oriented reforms, align with relevant Rwandan sector and national policy, and particularly with Rwanda's Vision 2050.

Vision 2050 aims to achieve a nation that has a clean and healthy environment that is resilient to climate variability and change, and that supports a high quality of life for its society. Vision 2050 presents a sustainable growth and development pathway, centred on economic diversification, in terms of the use and management of natural resources, while building resilience to cope with the impacts of climate change. This pathway links the high quality of life desired for Rwandan people, with the quality of the natural and the built environment.

Introduction

The CIP has driven substantial growth in agriculture, achieving a remarkable annual production increase of 7.5% from 2007 to 2017. This has been achieved across the beneficiaries of the CIP, primarily farmers who cultivate designated national priority food crops[2]. Nonetheless, this growth has come at a cost, significantly influencing Rwanda's biodiversity through habitat degradation and nutrient loading. The following proposal identifies viable pathways to redesign the CIP to balance agricultural productivity and biodiversity conservation more effectively.

Negative Impacts on Biodiversity

Habitat loss is the primary cause for concern. The conversion of natural landscapes to farmland has led to a dramatic decline in biodiversity. Monocropping and reliance on chemical inputs disrupt ecosystems, reducing the diversity of plant and animal species. Nutrient loading, particularly of nitrogen and phosphorus, much of which derived from fertilisers and farm effluent, is one of the biggest drivers of ecosystem change in terrestrial and freshwater ecosystems.[3]

Soil erosion and nutrient run-off also negatively impacts biodiversity, while hindering the productivity of farmers themselves. The focus on hillside agriculture without adequate erosion control measures has resulted in soil degradation and nutrient loss, negatively affecting wetland ecosystems[4] and agricultural productivity. Hillside agricultural land makes up more than half of Rwanda's total surface area and 93% of land under annual and perennial crops.[5] Soil erosion also contributes directly to landslides that often accompany flood events in parts of Rwanda. The newsworthy May 2023 flood and landslide event resulted in loss of farmland, homes, and caused human deaths and injuries.[6]

Chemical Pollution is the indirect consequences of fertiliser and pesticide application, a typical outcome of crop intensification, which contributes to water pollution and eutrophication, impairing both aquatic life and soil health and reducing wetland biodiversity.

Biodiversity loss also impacts the national fiscus. Inorganic[7] fertiliser, herbicide and pesticide run-off into streams, lakes and dams, results in an estimated average annual cost of pollution of USD 28.65 million.[8] In addition, the aggregate budget allocated for activities to counter biodiversity loss by improving soil health and fertility between 2018/19 and 2023/24 was USD 3.25 million.[9]

Notably, inorganic fertilisers have mainly been used to increase the area under rice cultivation – which persists on 20% or more of Rwanda's wetlands - rather than improve yields[10]. Rwanda research highlights a low (less than 30%) adoption of efficient soil management and use of fertilisers in Rwanda's rice production[11], threatening biodiversity while also weakening the natural functions of wetlands, severely undermining Rwanda's ability to manage the increasing frequency and intensity of flood events and promoting continued water flows during dry periods.

The proposed redesign of the CIP targets phasing out the subsidy for fertilisers used in rice production, reallocating the savings to subsidise the expansion and improved use of organic fertilisers and strengthening associated agricultural extension, research and monitoring and evaluation (M&E) services. Without intervention, ongoing fertiliser-driven degradation will continue to harm biodiversity and increase climate vulnerability – including of croplands – threatening the long-term sustainability of Rwanda's agricultural sector.

The evaluation of three scenarios for addressing this subsidy highlighted the dangers a business-as-usual rice subsidisation for both Rwanda's biodiversity and its farmers and communities. By contrast, a scenario for gradual elimination of fertiliser subsidies offers a path toward sustainability and aligns with Rwanda's National Rice Development Strategy. A phased approach of 5-10 years will allow farmers to adjust and adopt alternative practices while reducing environmental impact without severely affecting yields. There are several advantages to the phased approach:

Encourages the use of organic fertilisers, resulting in improved soil health.

- Reduces dependency on inorganic fertilisers promotes environmental sustainability.
- Minimises economic shocks to farmers through gradual transition.

The third scenario for subsidising organic fertilisers and increasing spending on public rice research, extension and M&E services, positions Rwanda to effectively leverage the Girinka programme, redirecting savings from fertiliser subsidies to support organic fertiliser use, public research, extension services, and capacity building for farmers. The advantages to adopting this scenario are that:

- Organic fertilisers sustainably enhance soil fertility.
- Increased availability of manure from livestock enhances agricultural productivity.
- Improved training and support help farmers adapt to organic fertilisation practices effectively.

Recommendations for Policy Redesign

A set of interrelated recommendations for the relevant policy makers, MINAGRI, the Rwanda Agriculture and Animal Resources Development Board (RAB) and REMA, emerged from the analysis:

- **Implement a phased subsidy reduction:** Gradually phase out inorganic fertiliser subsidies over 5-10 years to decrease environmental impacts and encourage sustainable practices. Social inclusion and transparency are paramount to success:

- Through inclusive and transparent decision-making, engage local communities, farmers, and biodiversity experts in the policy-redesign process.

- Conduct workshops and public consultations to ensure that the voices of affected stakeholders inform tailored solutions that reflect local needs.

- Establish mechanisms for ongoing dialogue between governmental bodies, NGOs, and affected communities about the subsidy redesign, ensuring that adaptations in the plan are based on continuous feedback and scientific assessments.

- **Enhance support for organic practices:** Allocate a portion of savings from phased-out subsidies to extend the Girinka programme and bolster appropriate blended organic-inorganic fertiliser use while protecting affected farmers from transition risk:

- Implement sustainable livelihood incentives to effectively direct subsidies and support that promotes optimal agricultural and ecological cultivation practices, using organic and inorganic fertilisers, to maintain or improve yields and enhance biodiversity and resilience.

- Conduct workshops and training programmes in conjunction with regular, capacitated extension support services designed to instil productive and sustainable agricultural practices within communities.

- **Invest in research and extension services:** Strengthen public funding for research into organic and inorganic fertiliser blending techniques, optimise water management strategies, and enhance farmer education on best practices.

- **Conduct impact assessments:** Collaborate with REMA for thorough studies into the impacts of fertiliser use on wetlands and continuously monitor the environmental effects and adapt policies based on findings.

- **Empower farmers:** Establish platforms for farmers to share experiences and best practices, enhancing knowledge transfer within the agricultural community.

- **Provide financial and technical support:** Direct support to communities adversely affected by the subsidy transition, including support for job transition programmes and income support for the transition phase to 'insure' farmers against incurred transition losses.

- **Restore degraded farming catchments:** Enable jobs and income diversification interventions in reforestation, wetland restoration, and soil recovery initiatives, all of which will develop healthy ecosystems that contribute to biodiversity and agricultural resilience.

Pathways for Implementation

The action plan outlined in the box that follows aims to enable the REMA to advocate for a redesign of agricultural subsidy programmes to promote sustainable agricultural practices and protect ecological health, particularly in wetlands affected by rice cultivation.

This reform action plan serves as a strategic approach to aligning agricultural practices with environmental sustainability, advocating for a shift in subsidy allocation that prioritises ecological health while simultaneously fostering enhanced agricultural productivity.

Conclusion

Redesigning Rwanda's rice production subsidy is critical for its environmental sustainability, economic resilience, and food security. By phasing out inorganic fertiliser subsidies, promoting organic alternatives, and investing in research and capacity-building initiatives, Rwanda can align its agricultural practices with the goals of conserving its natural resources while ensuring farmers maintain productivity and profitability. The recommended policy actions represent a proactive approach to future-proofing the rice sector amidst growing climatic challenge.

Action Plan for Subsidy Redesign and Implementation

1. Secure MINAGRI's support for the proposed subsidy redesign:

- Engage MINAGRI to gain active support for the redesign proposal
- Present evidence of fertiliser subsidy-related wetland degradation, especially in rice-growing areas
- Align messaging with MINAGRI's ongoing internal discussions on fertiliser subsidy reduction.

2. Validate ecological impacts of rice cultivation on wetlands:

- Support MINAGRI in undertaking a comprehensive environmental study on rice cultivation impacts
- Ensure REMA, RWB and relevant actors play advisory roles in the design and review of the study.

3. Develop sector-specific policy framework if study findings support redesign:

- Collaborate with MINAGRI on development of a sector-specific policy framework based on study outcomes
- Ensure alignment with existing national policies (PSTA5, NFP, NRS): Facilitate advisory input from REMA, RWB and RICCA.

4. Prepare for phase-out of rice fertiliser subsidies and planning of support measures:

- Support MINAGRI in planning a multi-year phase-out of rice fertiliser subsidies
- Identify additional interventions (research, extension, M&E for fertiliser and water management)
- Provide technical input from REMA and RWB

5. Secure Cabinet approval for budget reallocations under CIP:

- MINAGRI to present the case and proposed reallocation of CIP subsidy budgets to Cabinet
- Work in collaboration with the Ministry of Finance to justify reallocations based on policy framework
- REMA and RWB to support awareness and biodiversity monitoring.

6. Implement subsidy redesign and related interventions:

- MINAGRI/RAB proceed with implementing redesigned subsidy and support programmes
- Ensure provision of extension services via local government
- REMA and RWB to support awareness and biodiversity monitoring.

7. Coordinate stakeholder roles and secure buy-in for implementation:

- MINAGRI/RAB to coordinate engagement with key stakeholders including inter-governmental agencies (FAO, IFDC), development partners (World Bank, IFAD), NGOs, universities, farmers' cooperatives and the private sector
- NGOs to support capacity building and community outreach.

8. Evaluate environmental impacts of implementation and support adaptive management:

- REMA to conduct an environmental evaluation after three years of implementation
- Share findings with MINAGRI/RAB; MINAGRI/RAB to update policies, compliance mechanisms, and reporting structures based on outcomes.

REFERANCES

1 Rwanda Environment Management Authority (REMA), Study to Identify and Assess Subsidies with Possible Negative Impacts on Biodiversity and Propose Redesign Options: Analysis, Scenarios and Action Plans (Report, Kigali, 2024).

2 These food crops include maize, beans, wheat, soya, rice, Irish potatoes, cassava, bananas, and other selected fruits and vegetables.

3 United Nations Environment Programme (UNEP), Biodiversity and Agriculture: Safeguarding Biodiversity and Securing Food for the World, 22 May 2008.

4 The country's National Land Use and Development Master Plan (NLUDMP) for 2020 to 2050 recognises that 'Wetlands constitute the backbone of Rwanda's green development as they provide various goods and services that millions of Rwandans depend on.'

5 National Institute of Statistics Rwanda (NISR), Seasonal Agricultural Survey (SAS), 2022 (data for most important of 3 crop-producing seasons).

6 Petrie, B., Nattrass, N., Hakizimana, J.P., and Parker, R. (2023). Climate Landscape Analysis for Children (CLAC) in Rwanda: Final Report. For UNICEF Rwanda Country Office. OneWorld Sustainable Investments, Cape Town.

7 Organic fertilisers can also contribute to eutrophication, if inappropriately used (Foodprint, op. cit.).

8 Rwanda Environment Management Authority (REMA), Study to Identify and Assess Subsidies with Possible Negative Impacts on Biodiversity and Propose Redesign Options: Analysis, Scenarios and Action Plans (Report, Kigali, 2024). Author's calculations from Table 17, using average annual RWF:USD exchange rates. The calculation includes effects beyond eutrophication and accompanying biodiversity loss.

9 Rwanda Ministry of Agriculture and Animal Resources, Strategic Plan for Agricultural Transformation 2018-2024, June 2018, Annex 3: Detailed Costing. Author's calculations using approximate average RWF:USD exchange rate for the 6 years.

10 Anderson, K et al., Incentives in Support of the Agricultural Sector in the East African Community, International Growth Centre, August 2019 (ref. F-38420-RWA-1). Page 6; National Institute of Statistics Rwanda (NISR), Seasonal Agricultural Survey (SAS), 2022 (data for most important of 3 crop-producing seasons).

11 World Bank, Climate-Smart Agriculture in Rwanda (2015), pp. 6–7.


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