

**Getting to Scale with Successful Experiences
in Rice Sector Development in Africa**
Best Practices and Scalability Assessments

CARD Secretariat

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Acronyms and Abbreviations

AfDB	African Development Bank
AfricaRice	Africa Rice Center
AGRA	Alliance for a Green Revolution in Africa
AMSDP	Agricultural Marketing Systems Development Programme (Tanzania)
APD	Agriculture Planning Department (Uganda)
APRAO	Project for Improvement of Rice Production in West Africa (<i>l'Amélioration de la Production du Riz en Afrique de l'Ouest</i>)
BSD	Office of Strategy and Development (Guinea – <i>Bureau de Stratégie et de Développement</i>)
CAADP	Comprehensive Africa Agriculture Development Programme
CARD	Coalition for African Rice Development
CFC	Common Fund for Commodities
CIP	Crop Intensification Programme (Rwanda)
DAER	Directorate for Rural Development and Infrastructure (Togo – <i>Direction de l'Aménagement et de l'Équipement Rural</i>)
DFID	Department for International Development (the UK)
DFTD	Department of Foreign Affairs, Trade and Development (Canada)
DLM	Decentralized Land Management (Madagascar)
DRDR	Regional Directorate for Rural Development (Madagascar – <i>Direction Régionale du Développement Rural</i>)
DSIP	Agriculture Sector Development Strategy Investment Plan (Uganda)
ECOWAS	Economic Community of West African States
EDGET	Ethiopians Driving Growth through Entrepreneurship and Trade project
EIF	EDGET Innovation Fund (Ethiopia)
ETB	Ethiopian Birr
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FARA	Forum for Agricultural Research in Africa
FASID	Foundation for Advanced Studies on International Development
IFAD	International Fund for Agricultural Development
IFDC	International Fertilizer Development Center
IRRI	International Rice Research Institute
JICA	Japan International Cooperation Agency
JIRCAS	Japan International Research Center for Agricultural Science
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries (Uganda)
MAE	Ministry of Agriculture and Livestock (Guinea – <i>Ministère de l'Agriculture et de l'Élevage</i>)
MAEP	Ministry of Agriculture, Livestock and Fishing (Togo – <i>Ministère de l'Agriculture, de l'Élevage et de la Pêche</i>)
MEDA	Mennonite Economic Development Associates
MINAGRI	Ministry of Agriculture (Guinea)
MINAGRI	Ministry of Agriculture and Animal Resources (Rwanda)
MGA	Malagasy Ariary
NaCRRRI	National Crop Resources Research Institute (Uganda)
NEPAD	New Partnership for Africa's Development
NERICA	New Rice for Africa
NMB	National Microfinance Bank (Tanzania)
NRDS	National Rice Development Strategy

ONDR	National Rice Development Office (Côte d'Ivoire – <i>l'Office National de Développement de la Riziculture</i>)
PAPRIZ	Project for Rice Productivity Improvement in Central High Land (Madagascar)
PRiDe	Promotion of Rice Development Project (Uganda)
PC-23	Colonial Irrigation Scheme (<i>Périmètre de Colonisation</i>) No 23 (Madagascar)
PLOF	Local Land Occupation Plan (Madagascar – <i>Plan Local d'Occupation Foncière</i>)
PNF	National Land Programme (Madagascar – <i>Programme National Foncier</i>)
PNIA	National Agriculture Investment Programme (Guinea – <i>Programme national d'investissement agricole</i>)
PNIASA	National Programme for Agricultural Investment and Food Security (Guinea – <i>Programme National d'Investissement Agricole et de Sécurité Alimentaire</i>)
PMA	Plan for Modernization of Agriculture (Uganda)
PNDA	National Policy for Agricultural Development (Guinea – <i>Politique Nationale de Développement Agricole</i>)
PPI	Small Irrigation scheme programme (Madagascar – <i>Petits Périmètres Irrigués</i>)
RFA	Rwanda Fertilizer Association
RFSP	Rural Financial Services Programme (Tanzania)
RIS	Rice Industry Secretariat (Uganda)
RSC	Rice Steering Committee (Uganda)
RTC	Rice Technical Committee (Uganda)
RUDI	Rural Urban Development Initiatives (Tanzania)
SAA	Sasakawa Africa Association
SACCOS	Saving and Credit Cooperatives Societies (Tanzania)
SG 2000	Sasakawa Global 2000
SNNPR	Southern Nations, Nationalities, and Peoples' Region (Ethiopia)
SRGR	Regional Service for Rural Engineering (Madagascar – <i>Service Régionale du Génie Rural</i>)
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
USD	U.S. Dollar
TZS	Tanzanian Shilling
TWLB	Tanzania Warehouse Licensing Board
VSLA	Village Savings and Lending Association (Ethiopia)
WRS	Warehouse Receipt System
WUA	Water Users Association
ZAAP	Planned Agricultural Development Areas (Togo – <i>Zone d'Aménagement Agricole Planifié</i>)

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Executive Summary

All 23 of the African countries that the Coalition for African Rice Development (CARD) has been working with over the last six years are making rapid strides in pursuing the objective of doubling rice production by 2018. Since the inception of its engagement, CARD has supported them in a variety of areas – from developing their National Rice Development Strategies (NRDS) to facilitating exchanges with other countries in Africa or Asia that could offer considerable experience and knowledge in a particular aspect of the rice value chain.

CARD continues to engage, with this publication in particular, in an exercise of decoding and articulating successful experience gained in the development of rice value chains and, especially, specific segments thereof that occurred in the last decade.

There is value in documenting and sharing successful experiences alone. However, through the collection of these experiences, CARD particularly wants to add value to the deciphering of the key factors that determined successful outcomes. For this purpose, CARD adopted the Scaling-Up Framework developed by the International Fund for Agricultural Development (IFAD) in collaboration with the Brookings Institution in 2010. Answering the framing questions inherent to the Framework helps not only in the identification of the success factors, but also in the assessment of the level of replicability of each experience. This value addition resonates well within CARD's own mission to support African countries in adopting rice sector development models that do yield sustained results.

The collection of experiences CARD offers with this publication relates to 10 cases, each of which represents a set of good practices that emerged in eight countries – Uganda, Ethiopia, Togo, Madagascar, Côte d'Ivoire, Rwanda, Tanzania and Guinea.

Uganda offers two excellent models for possible replication – one related to the model adopted by the country for the dissemination of NERICA (Case 1) and one on the integration of its National Rice Development Strategy within the agriculture sector development strategy of the country (Case 9). The success of both models depends on a variety of particularly favourable conditions and choices. However, the most important ones are the strong commitment and action on the part of the Ugandan political leadership.

In Ethiopia (Case 2), farmer-cluster and farmer-processor models are used to strengthen the linkages among value chain operators. Capacity building, market information and analysis as well as technical backstopping are included in the assistance offered to operators. On the right track in terms of exit plans after three years of operation, the adopted models envisage substantive nurturing before linkages can be considered 100% self-sustaining and completely in the hands of private sector actors.

The model is applicable in a particularly favourable environment where agro-climatic conditions, market demand, transportation infrastructure, policy setup and fiscal and financial space up to sustainability are available and suitable to rice intensification. Particularly remarkable is the impact on women processors and farmers' incomes from the development of a niche market for *Addis Rice*.

Through combining farmers' mobilisation with land distribution and support to agricultural intensification, the Togolese government experience described in Case 3 shows that strong impact on incomes and rice production is also possible in a short span of four years. The precondition for access to agricultural land and support offered by government was the formation of groups of farmers inhabiting and tending the same areas. The success of the experience depended not only on the capacity of the local governments in effecting contract-based land transfers and on the financial resources made available by the government and donors, but also on the strong political will behind the whole intervention. Operationally, the presence of a small field management team in each site is key, as these teams enabled access by farmers to the full package of assistance offered by the programme in addition to providing oversight on implementation progress.

Madagascar offers two extraordinary experiences in the areas of participatory irrigation management (Case 4) and of protection of land ownership and secondary land-use rights (Case 7). The first case history shows the importance of building sustainable community institutions and offering technical solutions that are manageable and affordable by the communities. The second shows the importance of protecting the whole bundle of rights associated with land use before rice development can commence. Success in both cases depended on the

strong sense of ownership developed by both government institutions and the communities for the idea behind the intervention itself as well as adequate financial space and technical capacities.

The establishment of trust and good communication flow among value chain actors, and bringing financial institutions to the business negotiation table, are the two most important elements of the model found in Côte d'Ivoire (Case 5) – a model that led to rice production more than doubling in less than four years. The model is replicable provided certain preconditions are in place. In addition to political commitment, appropriate policies and availability of land and water, the model requires the existence and willingness of private sector service providers to provide rice producers and processors with quality inputs, financial services, and improved processing equipment. Furthermore, the model requires a good transportation network, a demand that is able to absorb expanded rice production and a cultural setting that is supportive of conformity with contracts.

The importance of creating agro-input supply in addition to the demand before commencing a programme of rice intensification emerges forcefully from Case 6 covering Rwanda's experience in this area. Here, success depended on capitalizing on the synergies emerging from the cooperation with on-going agricultural development programs, establishing linkages among chain stakeholders including financial institutions, creating the demand for inputs through demonstration plots and building the capacity of potential and existing agro-input suppliers. This model relies on a very fertile policy and institutional setup and on the financial resources of private and public banks. As long as local banks are willing to invest in agro-input dealerships, financial space for replication and scaling-up of this model could be created without non-domestic financing.

Despite still being in the early stages of implementation, the Tanzanian experience with the introduction of the warehouse receipt system (Case 8) shows the potential of the system as an optimal marketing and storage solution for farmers, especially rice farmers, within African contexts. The system is thriving thanks to a well-established legal and policy framework that enables the setting-up and operation of warehouse infrastructure in rice producing areas. It is also thriving thanks to the partnerships established among public, private and people's organisations for the establishment, operation and maintenance of the warehouses themselves. The case study shows that bringing the system to scale requires good access to transport infrastructure and markets as it often generates a profit margin only in well-connected areas where commercial and intensive rice production prevails. In addition to ample market demand for domestic rice, successful replication depends on a culture supportive of contract conformity and enforcement, as well as trust-based relationships among rice producers, particularly when collective storage and collective bargaining are required. These obtain maximum benefit from the system when they have access to market information necessary to knowing when to sell and when local financial institutions accept warehouse receipts as loan collaterals/security instruments.

Guinea (Case 10) offers an example of good practice in terms of integration of NRDS into a country's overall development framework and in its agricultural development strategy in particular. Here, factors contributing to such achievements relate to the institutional framework established for the formulation, implementation and monitoring of the NRDS, the important role played by charismatic national champions, the broad recognition of the importance of rice for the country's overall economy and food security as well as the good quality of NRDS in terms of both formulation process adopted, and the strategic direction it provides.

The good timing factor was also important with the basis of the NRDS being available when preparation began for the overarching agricultural development strategy.

Except for cases 9 and 10, which refer to the formulation of national rice development strategies, all of the models presented in this collection have in common the following preconditions for replication:

- (i) Strong political commitment to the success of the intervention, from which usually arise adequate policy and institutional setups and fiscal and financial space;
- (ii) Willingness and capacity of private sector service providers (in particular, the financial institutions) to serve rice producers and processors, together with availability of technical backstopping and financial resources to build their capacities, if necessary;
- (iii) Favourable agro-climatic, infrastructure (in particular, irrigation and transportation infrastructure) and market demand conditions;
- (iv) Establishment of good communication flows and trust-based relationships among value chain actors;
- (v) Cultural settings that support contract conformity and sanction dysfunctional behaviour, and;
- (vi) Protection for and certainty of land ownership and use rights.

Introduction

Since the late 1990s, Africa has experienced rapid economic growth,¹ unprecedented since the waves of independence in the 1960s and the 1970s.² The resulting income increases, together with population growth and rapid urbanization, have contributed to changes in food consumption patterns, including significant increases in rice consumption.³ According to the FAO statistics, the consumption of rice, which has been regarded as a luxurious commodity in many parts of Africa, has dramatically increased in recent years.⁴ The increase of approximately 37% in rice consumption in Africa during the period 1999-2007 was, for instance, higher than that for lower value crops such as maize (20%), sorghum (21%) and cassava (32%).⁵ Even though rice production also increased significantly during the same period of time (by approximately 20%), the pace of the production increase has not kept up with that of the consumption increase, thus widening the demand-supply gap.⁶

In 2007-08, the food price hike struck the international market, and threatened not only Africa's food security, but also its political and socio-economic security, causing high inflation rates as well as food riots in some African countries.⁷ Since the price of rice was more volatile than that of other basic cereals,⁸ the food price hike hit rice harder than other cereals.

Against this backdrop, the Coalition for African Rice Development (CARD) was established in 2008 at the 4th Tokyo International Conference for African Development (TICAD IV). Led by a consultative group of international and African organizations and institutions which are prominent in rice development in Africa,⁹ CARD aims at doubling rice production in Sub-Saharan Africa by 2018, through providing 23 African countries with various supports for rice sector development.¹⁰ Main CARD activities at country level include: (i) assistance to the development and implementation of the National Rice Development Strategy (NRDS)¹¹; (ii) identification of the interface between the NRDS and the growth and poverty reduction strategies of concerned countries; (iii) capacity development of human and institutional resources of target countries; (iv) support to mechanization and seed development; (v) identification of models in rice value chain development; (vi) support to South-South and Triangular Cooperation related to the rice sector; and (vii) information sharing and exchange among relevant stakeholders and member countries.

Sharing of ideas and experiences for successful rice sector development has prominently featured within the South-South cooperation framework, in particular. Those sharing best practices were mainly from Asia, reflecting the advanced rice sector, both in terms of production and marketing, in Asian countries. However, some CARD stakeholders pointed out that the contexts of Asian countries at the time of 'Green Revolution' in the 1960s and the 1970s were quite different to those of Africa today, thus the Asian experiences might not be relevant, unless adjusted to the current specific contexts of African countries. In addition, some African countries have already accumulated

1 African economy has grown more than 5% on average in the 21st century. The World Bank shows that the average growth rate of Africa in 2013 is 4.9%, with a third of Sub-Saharan countries growing at more than 6 %, and that this trend will persist. (World Bank, Oct 2013, *Africa's Pulse* Vol. 8) <http://www.worldbank.org/content/dam/Worldbank/document/Africa/Report/Africas-Pulse-brochure-Vol8.pdf>

2 The slow economic growth of Africa in the 20th century was revealed by many researchers. Among them are Sachs and Warner who showed the low economic growth of African countries from 1965 to 1990 in comparison with other developing countries (Sachs, J.D., Warner, A.M., 1997, "Sources of Slow Growth in African Economies", *Journal of African Economies*, Vol. 6., No.3 pp335-76) <http://jae.oxfordjournals.org/content/6/3/335.full.pdf+html>

3 A number of researches show that the income increase will lead to increase in higher value crops. Among them is Regmi, Deepak, Seale Jr., and Bernstein, 2001, "Cross-Country Analysis of Food Consumption Patterns", Regmi et al., *Changing Structure of Global Food Consumption and Trade*, Chapter 2 pp14-23, USDA, Agriculture and Trade Report WRS-01-1

4 FAO STAT accessible at <http://faostat.fao.org/>

5 *Ibid*

6 This gap is filled by rice imports from other parts of the world. Rice imports of Africa increased from 4.8 million MT in 1999 to 9.5 million MT in 2009 (FAOSTAT). <http://faostat3.fao.org/faostat-gateway/go/to/home/E>

7 FAO, 2008, *Soaring Food Prices: Facts, Perspectives, Impacts and Action Required*, the information document (HLC/08/INF/1) for the High-Level Conference on World Food Security in June 2008 <ftp://ftp.fao.org/docrep/fao/meeting/013/k2414e.pdf>

8 A small portion of total world rice production is traded in the international market, and much of traded rice is bought or sold at contract-base, and not in free markets. The free markets therefore are residual and have high volatility. (Gilbert, C.L., and Morgan, C.W., 2010, "Food price volatility", *Philosophical Transaction of the Royal Society B: Biological Science*, August 2010, 365 pp3023-3034) <http://rspb.royalsocietypublishing.org/content/365/1554/3023.full.pdf+html>

9 The steering committee of CARD consists of: AGRA, AfDB, Africa Rice, FAO, FARA, IFAD, IRRI, JICA, JIRCAS, NEPAD and the World Bank.

10 More detailed information can be obtained at <http://www.riceforafrica.org/new/>

11 NRDS is the commodity-specific strategy on rice developed for each CARD member country

a wealth of successful rice sector development experiences and derived valuable lessons, which could be shared to benefit rice development in other countries in the continent.

With the financial support of the International Fund for Agricultural Development (IFAD), the CARD secretariat decided to take stock of such successful experiences, and examined their applicability to other African countries. In this stocktaking exercise, models were collected from eight countries. Though not exhaustive, these models cover almost the entire rice value chain from policy formulation to provision of inputs and extension services, production, land management, marketing, financing, and irrigation management. Although each of these models relates to only one or two segments of the value chain, the models as a set provide implications in quite comprehensive domains.

Most successful experiences were recorded in contexts where a solid partnership with the private sector was established, and/or careful attention was paid to market factors, both of which are important elements for sustainable and healthy development of the rice sector.

All experiences relate to interventions sponsored by governments, development partners and the private sector, and most cases were successful as a result of the efforts, collaboration and partnership by all stakeholders. Further, some experiences relate to the implementation of specific projects and programmes, some to the implementation of national policies, and others to a combination of all three.

With two exceptions (on the integration of NRDS into overarching agricultural development frameworks in Guinea and Uganda), all experiences are presented in this publication according to a standard format organized under the following headings: general description of the model, impacts, success factors, scalability assessment and conclusion.

Scalability assessments, in particular, were conducted on the first eight cases following the *Scaling-Up Framing Questions* guidance tool developed and verified for its effectiveness by IFAD and the Brookings Institution in 2010 (Annex 1). The Scalability Assessment Framework was designed for analyses of applicability of successful experiences to other areas within the same countries or in other countries. Specific contexts and conditions of a country and/or areas where the model is to be adopted determine the spaces for applicability in different dimensions and thus enable assessment of the level of replicability of the model.

The scalability assessments of successful models in this publication were, however, conducted without any assumption on where to adopt these models, and therefore lack some specificity in terms of “spaces” for scaling-up. The assessments, instead, present prerequisite conditions that determine “spaces” and other critical factors for successful adoption of models.¹² Nevertheless, the analyses offer valuable information on successes observed along the rice value chain in Africa, and provide implications on their replicability to other African countries. In this way the analyses in this document could make a valuable contribution to the acceleration of efforts made by African countries towards rice sector development.

The final two cases concern the integration of a National Rice Development Strategy (NRDS) into an overarching agricultural development framework such as the CAADP investment plan.¹³ These cases describe the successful experiences in Uganda and Guinea, showing how the governments of both countries mainstreamed NRDS and rice in their policy, and eventually enhanced the NRDS implementation. This success was determined by various factors such as political incentives, the timing of the formulation of strategic documents and the timing of their integration, which are usually almost impossible to control. The case studies, therefore, did not use the Scalability Assessment Framework for the analyses of the applicability of cases to other countries, since the best way for NRDS integration into the CAADP investment plans should be tailor-made by each country in its respective context, in particular, the political one. Nonetheless, the analysis of these two cases provides useful implications for other CARD member countries.

¹² African countries are so diverse and the analysis could not take a “generalizing approach”.

¹³ CAADP stands for Comprehensive Africa Agriculture Development Programme. Endorsed by the African Union Heads of State Summit in 2003 as an agricultural programme of NEPAD (The New Partnership for Africa's Development), CAADP focuses on improving food security, nutrition, and increasing incomes in Africa's largely farming-based economies. It aims to do this by raising agricultural productivity by at least 6% per year and increasing public investment in agriculture to 10% of national budgets per year. The CAADP Investment Plan is a national plan for prioritized agricultural investments formulated through the CAADP process in each country. <http://www.nepad-caadp.net/about-caadp.php>

CASE 1:

Dissemination of NERICA Cultivation in Uganda

<i>Basic Information on the Model</i>	
Country	The Republic of Uganda
Area of Intervention in value chain	Dissemination of NERICA cultivation
Mode of Intervention	Policy and Projects
Implementer	Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), National Agricultural Research Organization (NARO)
Partner Organization(s)/Institution(s)	Japan International Cooperation Agency (JICA): financial and technical supports

1.1 General Description of the Model

The agriculture sector plays a critical role in terms of both food security and economic growth in most African countries. This is particularly true in Uganda where natural endowments such as fertile soil, untapped land resources and abundant rainfall determine the country's high agriculture potential. Similarly to many other economies in Africa, the demand for rice in Uganda has increased quite rapidly due to urbanization and economic growth.¹⁴ Since 2000, the Government of Uganda has forcefully promoted rice production, and officially introduced the New Rice for Africa (NERICA) varieties to the country in 2002 (see the Box 1.1 for NERICA), as one of the tools to achieve the government's overarching development goals, poverty reduction and improved food security. In 2004, President Yoweri Museveni launched the Upland Rice Project, which promoted the adoption of NERICA, while Professor Gilbert Bukenya, at the time Vice President, engaged in an intense campaign for NERICA adoption across the country. In addition, a free and/or on-credit seed distribution scheme was introduced to further support dissemination of NERICA.

Despite all these efforts, the adoption of NERICA was stagnant. Based on FAOSTAT and interviews with Uganda government officials, the Japanese Ministry of Foreign Affairs estimated that the cultivated area with NERICA in Uganda was merely 1,500 ha in 2004.¹⁵ Also surveys conducted by the Makerere University and the Foundation for Advanced Studies on International Development (FASID) under the "Research on Poverty, Environment, and Agricultural Technology (REPEAT)" project revealed the adoption rate of NERICA in Uganda was as low as 6.3% in 2005.¹⁶

Against this backdrop, the Japan International Cooperation Agency (JICA) started its cooperation activities to support the efforts of the Government of Uganda for the promotion of NERICA cultivation. JICA's Support came first through the dispatch in 2004 of a rice expert who was based at the National Crop Resources Research Institute (NaCRRI) of the National Agricultural Research Organization (NARO). His main task was to help develop human and institutional capacity in the NERICA cultivation, research and dissemination. As a first task, the expert assisted establishing the testing and demonstration plots to set up environment for the basic NERICA research and extension training courses. Testing plots were used to train researchers in NERICA research in various scientific areas such as variety tests, spacing tests, fertilizer application and water management, while demonstration plots were used to train extension workers and farmers.

¹⁴ According to *Rice Value Chain Study in Achuli and Lango sub-regions*, the rice demand increase in Uganda was quite significant, from 47,000 tons in 1990 to 200,000 tons in 2006 at an average rate of about 9.5% per year. (The Plan for Modernization of Agriculture Secretariat, 2009)

¹⁵ The Ministry of Foreign Affairs, the Government of Japan, 2011, *Uganda Kuniibetsu Hyoka* (Country-Specific ODA Evaluation Report on Uganda), Tokyo, Japan

¹⁶ Yamano, T., Sserunkuuma, D., Otsuka, K., Omiat, G., Ainembabazi, J.H. & Shimamura, Y., 2004. *The 2003 REPEAT survey in Uganda: Results*, FASID Development Database 2004-09-01, Foundation for Advanced Studies on International Development, Tokyo, Japan.

Box 1.1: What is NERICA?

New Rice for Africa (“NERICA”) is a cultivar group of interspecific hybrid rice developed by the Africa Rice Center (AfricaRice) to improve the yield of African rice cultivars. It was created by crossing *O. glaberrima* and *O. sativa*. As these different species do not interbreed naturally, a plant tissue culture technique called *embryo rescue* was used in order to make sure that crosses between the two varieties survived and grew to maturity. The new varieties displayed *heterosis*, the phenomenon on the basis of which the progeny of two genetically different plants grow faster, yield more, or resist stresses better. In particular, the new varieties showed:

- (i) An increase in grain head size from 75-100 to 400 grains per head;
- (ii) An increase in yield from 1 to 2.5 t/ha, and to 5 t/ha with fertilizers’ use;
- (iii) 2% more protein contents than their African or Asian parents.
- (iv) Plants taller than most other varieties, which made harvesting easier.
- (v) Pest resistance and better tolerance to drought and infertile soils.

Some NERICA lines showed high growth with low uptake of water – an appropriate feature for lands subject to long dry spells.

The new rice varieties, suited to dry lands, were distributed and sown on more than 200,000 ha during the last five years in several African countries, notably Guinea, Nigeria, Côte d’Ivoire, and Uganda, according to the Africa Rice Center. Though this represents a major advance, it is still projected to fall short of meeting the growing demand for rice as a food staple.

[Source]: Authors’ summary from Fujii, Michihiko et al., 2004, Ishihara, *Drought resistance of NERICA compared with other grains*, 4th International Crop Science Congress, Brisbane, Australia.

Demonstration plots are managed so that NERICA is cultivated throughout the year, allowing NERICA plants at all growth stages to be always available for training courses. Utilizing the NERICA plants in the demonstration plots, hands-on training courses of 1-2 weeks are carried out with coverage of the whole NERICA cultivation process from land preparation to post-harvest in both theory and practice. At the end of training courses, each trainee is granted 1 kg of the NERICA seed so the knowledge acquired can be put into practice.

Based on the positive results of the expert activities, JICA decided to scale up its cooperation from the dispatch of an individual expert to the implementation of a technical cooperation project – the NERICA Rice Promotion Project in Uganda. The project was carried out from 2008 to 2011 with the objective to improve quantity and quality of NERICA produced in the target areas (see Table 1.1 for further details), and was a part of the 10-year JICA Cooperation Programme on Promotion of Rice Development (2008-2018) that is synchronized to the time frame of the CARD initiative.

Both research and extension activities followed on from the previous cooperation by the JICA expert to the NERICA Rice Promotion Project in Uganda, and they are being further continued and scaled up in 2012 by the Promotion of Rice Development (PRiDe) Project, which has extended the project scope to lowland rice as well as to farm mechanization. JICA is committed to support NERICA promotion in Uganda through the PRiDe project up to 2016.

Table 1.1: Summary of the NERICA Rice Promotion Project in Uganda

Project Title	NERICA Rice Promotion Project in Uganda
Project Period	August, 2008 – June, 2011 (3 years)
Implementer	National Agricultural Research Organization (NARO) with the support of JICA
Narrative Summary	<p><Project Purpose> NERICA Rice production is improved in quantity and quality in the target area.</p> <p><Expected Outputs> Output 1: Research and extension capacity of NERICA (upland and lowland) in National Crops Resources Research Institute (NaCRRI) and Zonal Agricultural Research and Development Institutes (ZARDIs) is enhanced. Output 2: Appropriate NERICA production techniques are introduced to farmers, famers groups, rice millers, etc. in the Project area.</p> <p><Inputs (at the time of evaluation)> 1) Japanese side: Total cost approximately 328 million Japanese yen Long-term Experts: 3 persons Equipment: 50 million yen Short-term Experts: 28 persons Local Activity cost: 130 million yen Trainees received: 8 persons 2) Ugandan side: Counterpart: 19 persons Local Activity cost: Approximately USD 10,000 Land and Facilities: Office spaces, laboratories, training, demonstration and research fields</p>

[Source]: JICA, 2011, *Terminal Evaluation Report on NERICA Rice Promotion Project in Uganda*

1.2 Impacts

Even though the NERICA promotion activities by the Government of Uganda and JICA include some research components, the analysis in this section focuses solely on the impacts on the dissemination of NERICA cultivation.

The area for the NERICA cultivation grew from 1,500 ha in 2004 to 40,000 ha in 2008 (recording more than a 25-fold increase) and to an estimated 60,000 ha in 2012 (a 40-fold increase). The share of NERICA's contribution to the total rice production also increased from 1.6% in 2004¹⁷ to more than 30% in 2008,¹⁸ and to 71% in 2011.¹⁹

According to JICA's Public Relations home page,²⁰ the JICA expert dispatched from 2004 to 2008 conducted 28 on-site training courses for 790 extension workers and farmers, and 30 training courses outside NaCRRI for more than 2,300 people. The terminal evaluation report on the NERICA Rice Promotion Project in Uganda from 2008 to 2011 indicates "a cumulative total of 12,578 farmers and 1,677 non-farmers were trained (during the project) and 64.3% of the trained farmers have actually started to cultivate NERICA".²¹ The PRiDe Project, the successor project to the NERICA Rice Promotion Project in Uganda, started in November 2011 with an additional implementer, the National Agricultural Advisory Services (NAADS), and has already trained a further 175 extension workers and 13,058 farmers as of August 2013. Each trained farmer received 1 kg of NERICA seed.

Of course, the achievements made in the NERICA promotion in Uganda were not solely due to JICA. Political commitment and the policy priority put on NERICA promotion by the Government of Uganda was a strong driving force, and impact was made in a complementary manner with the government programme that included intensive NERICA promotion campaigns and the Upland Rice Project. Although the degree of JICA contribution cannot be

17 Ministry of Foreign Affairs, the Government of Japan, 2011, *Uganda Kunibetsu Hyoka* (Country-Specific ODA Evaluation Report on Uganda), Tokyo, Japan

18 *Ibid*

19 Gitau, R., Mburu, S., Mathenge, M. and Smale, M., 2011, "Trade and agricultural competitiveness for growth, food security and poverty reduction: A case study of wheat and rice production in Kenya" Working Paper Series 45/2011. Tegemeo Institute of Agricultural Policy and Development. Nairobi, Kenya. pp69

20 http://www.jica.go.jp/story/media/media_28.html

21 JICA, 2011

numerically defined, there is nonetheless no doubt about the contribution of a series of JICA cooperation activities, given the number of beneficiaries exposed to the cultivation of NERICAs through JICA programmes and the high NERICA adoption rate. As Diagne illustrated from the case of Côte d'Ivoire,²² the high yielding attributes of NERICAs alone do not guarantee their diffusion. Cooperation activities supported by JICA filled technical gaps in NERICA cultivation in Uganda and the insufficiency of human resources specialized in rice cultivation in 2004, and made it possible to expose a large number of people (extension workers and farmers) to the experience of NERICA cultivation. Increasing farmers' access to information (exposure to knowledge about NERICAs) was critical for the adoption of NERICAs, especially in the initial stage of the diffusion process,²³ and JICA's contribution to Uganda was quite significant in this regard.

1.3 Analysis of the Success Factors

The success of NERICA diffusion in Uganda was contributed to by the following factors:

(1) Strong political commitments and public support by the Government

Strong political commitment and policy priority bestowed on NERICA by the highest levels of the Government were the most crucial factors that determined the high uptake of NERICA varieties in Uganda. The testimony to this commitment was the involvement of high-ranking executives of the Government in the intense NERICA promotional campaigns and the launching of the Upland Rice Project in which NERICA seeds were distributed on-credit or for free during early stages of its implementation.

Another favourable factor was the introduction of a 75% import duty against imported rice from outside the East African Community. This regional trading policy significantly increased the competitiveness of Ugandan rice in domestic markets and enhanced its domestic trading, thus providing incentives for Ugandan rice farmers to increase their production. In short, these government commitments positively and strongly influenced the setting up of the conducive environment for NERICA cultivation.

(2) Increasing demand for rice and existence of markets

Rice consumption has increased rapidly in cities in Uganda and the surge in the demand for rice in urban areas assured a market for surplus NERICA production.

Also, being traditionally a delicacy in most parts of Uganda, rice is a commodity of great consumer preference. The surplus production was, therefore, easily consumed either within households or local markets, even in remote areas with poor market access.

(3) Utilization of foreign experts in filling knowledge and information gaps

Initially, Uganda lacked knowledge, information, experience in NERICA cultivation, firstly because rice was a rather new crop in the country, and secondly because NERICAs had been newly developed. This knowledge and information gap was filled by the Japanese experts who had good knowledge and experience in rice cultivation. The experts assisted the research on NERICAs in order to accumulate data and information regarding the NERICA cultivation in Uganda. The research was conducted in a collaborative manner between Ugandan technical officers and Japanese experts, thus helping building national capacity, which enabled information and knowledge about NERICAs to reach a larger number of extension workers and farmers.

(4) Appropriate extension approach, quality training, and a strategic start-up kit

Right approaches adopted in promotion activities accelerated the dissemination of NERICA in Uganda. The NERICA cultivation was promoted through provision of training courses by the Government of Uganda and JICA. It is noteworthy that the training programme adopted a 'cascade approach' where training sessions were provided to both extension workers (training of trainers) and farmers (eventual target beneficiaries) simultaneously. The 'cascade approach' is quite effective, especially at the initial stage of new technology diffusion, because the eventual beneficiaries can immediately put into practice the new technology, while training of trainers reaches eventually to a larger group of people. This choice of approach proved a winning one as it granted fast diffusion of NERICA cultivation across the country.

²² Diagne, A., 2006, "Diffusion and adoption of NERICA rice varieties in Côte d'Ivoire", *Developing Economies* 44 (2): pp208–31.

²³ Kijima, Y. and Sserunkuuma, D., 2013, "The adoption of NERICA rice varieties at the initial stage of the diffusion process in Uganda", *African Journal of Agricultural and Resource Economics*, vol. 8, No. 1, pp45–56

Furthermore, the demonstration plots at NaCRRRI were established in a way that NERICA plants at all different growth stages were always available. This contributed to the effective dissemination of NERICA as farmers could learn everything about NERICA cultivation in a limited training period (1-2 weeks) in a practical manner and gain the confidence to start practicing it in their own farm plots.

The distribution of a start-up kit also helped trainees immediately put into practice what they learned in the training. The kit (1 kg of NERICA seeds, the cultivation guide and printed materials) is provided to farmers by JICA projects at the end of the training courses, and encouraged farmers to start NERICA cultivation.

(5) Favourable natural and climatic conditions of Uganda for NERICA cultivation

Natural and climatic conditions favourable to NERICA cultivation in Uganda, such as abundant rainfall and fertile soil, led to fast expansion of the technology. Also, year-round stability of sunshine duration, rainfall and temperature made it possible for NaCRRRI to consistently provide trainees with suitable training environments with NERICA plants of all different growth stages throughout the year.

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1.4 Scalability Assessment

Utilizing the *Scaling-Up Framing Questions* developed by IFAD in collaboration with the Brookings Institution, Table 1.2 below presents the scalability assessment for the model used for the dissemination of NERICA cultivation.

Table 1.2: Scalability Assessment

Framing Questions		
Ideas	What is the intervention to be scaled-up?	Diffusion of new agriculture technology (NERICA cultivation) through combination of policies and projects
	Whose idea?	Experience from Uganda (by the Government of Uganda and JICA)
	Has it been tested/piloted?	Remarkable success in Uganda during 2004-2008, and brought to scale from 2009 (planned to 2016)
Vision	What could be the appropriate scale of the intervention?	The appropriate scale of the model is to be determined by countries to replicate this model, depending on political vision, priority given to NERICA, availability of market space, environmental space, financial capacity, as well as human and institutional capacity and resources.
Drivers	What or who are the drivers for the scaling-up process ahead? (including local leaders or champions, external catalysts and incentives)	<p>Supporting Policies – Taking the food crises caused by soaring food prices in 2008, policies are in place in all CARD countries to support increasing production of basic cereals. These favourable policies can be drivers for replication of the model in many African countries.</p> <p>Market demand for rice – The increasing trend of rice consumption is a fundamental element for scaling this model, avoiding production glut. However, consumer preference for upland rice needs to be critically analyzed if NERICA is to be diffused.</p> <p>Food Insecurity – A food insecurity issue can be a powerful driver for scaling this model in countries where upland rice can fill the food demand gap.</p> <p>Partners' vision and Commitments – AfricaRice, IRRI, and other research institutions, development partners and financial institutions can be drivers to bring this model to scale in other countries, since they commit to the rice production increase in sub-Saharan Africa.</p>

Framing Questions		
Spaces	Fiscal/Financial	Even though financial capacity of African countries is limited in general, governments can create adequate financial and fiscal space for replicating this model, in collaboration with development partners as well as the private sector. Still, contributions of development partners depend on government leadership and the priority on NERICA.
	Natural Resource/ environmental	A climatic condition favourable to NERICA production is indispensable. A stable climate, in particular, is necessary for the replication of the model in terms of the provision of the year-round training courses with NERICA of all growth stages. Availability of arable land (and suitable for NERICA cultivation) and water resources is another determinant of this model's success. Competition over such resources with other needs to be taken into consideration, from both income and food security perspectives.
Spaces	Policy	While policy space for scaling rice production already exists in most CARD countries (given current rice demand increases), it varies from one country to another for upland rice, especially NERICA. Such policy space usually depends on the government priority given to upland rice, on market demand, and people's preference, as well as available natural resources.
	Capacity	Minimum organizational, institutional, managerial and technical capacities are prerequisites to the replication of the model, since they enable provision of adequate training courses on NERICA cultivation. The capacity space for scaling-up this model can, however, be created through utilization of foreign experts (especially at the initial stages), while governments need to build national capacity over time and replace foreign human resources.
	Political	Political commitment to increase rice production is a fundamental to determine the political space for replicating this model.
	Cultural	Consumers' preference for rice (especially NERICA in this case) is a prerequisite condition for the model's successful adoption.
	Partnership	There is partnership space with AfricaRice, IRRI, JIRCAS and national research institutions who have an interest in NERICA diffusion, and have expertise and knowledge in related areas.
Pathways	What are the pathways for scaling-up in other countries?	Pathways depend on the context in each country and even each specific area within the country in some cases. However, learning from the experience of Uganda, it is important to consider that:
	What is the time frame for pathways to extend?	(i) If the conditions are favourable, the model can be brought to scale in a relatively short period of time (activities by the JICA expert were scaled up to projects in about four years from 2004 to 2008). It is, however, important to recognize that the dissemination of NERICA cultivation could usually take longer periods of time;
	How do the drivers and spaces define these pathways?	(ii) Partners should be committed to stay the course for the whole or most of the duration period (JICA for example committed up to 2016); (iii) Promotional activities should accompany the whole experience and depend on political commitment to the programme and a well-thought-out diffusion campaign;
	Bottlenecks for scaling and risk mitigation.	(iv) The exit strategy of foreign experts should involve triggers relating to the level of national capacities they are responsible to help build; (v) Without the appropriate natural resource endowments and market conditions, upland rice production would not have the extraordinary results as it did in Uganda.

1.5 Conclusions

Although the pathways for scaling-up this model need to be elaborately defined by each country, there is a significant room for adapting Uganda's NERICA dissemination model to other African countries if critical conditions are all met. From the above, the following have emerged as the critical conditions for successful replication of the model:

- i) Policy and political priority bestowed upon NERICAs is necessary for mobilization of adequate financial, institutional and human resources;
- ii) Market conditions that incentivize the producers to adopt NERICA cultivation. (existence of market demand for upland rice, and a favourable trading policy for domestic rice are prerequisites);
- iii) Capacity to provide high-quality training courses (even with the assistance from foreign experts) to producers;
- iv) Climatic and environmental conditions that are favourable to NERICA cultivation and provision of effective year-round training;
- v) Availability of national and/or international human resources who can fill the gap in knowledge and information on the new technology. (NERICAs)

In addition, the approach applied in this model (e.g. the cascade approach targeting final beneficiaries and extension agents simultaneously, provision of training where trainees can experience the whole process of rice cultivation in a short period of time, and provision of seeds as starter kit) could also be applicable to diffusion of other farming technologies. In fact, based on this good experience, JICA started replicating the model within one of the projects it supports in Cameroon.²⁴

It is, however, important to note that, for successful replication of this model in other countries, it is critical to carefully assess the various “spaces”, and customize the ideas and approaches of the model to better fit in other countries' contexts.

²⁴ The project for Upland Rice Development of the tropical Forest zone in Cameroon started in 2011 for five years.

CASE 2:

Strengthening of Rice Value Chain Linkages in Ethiopia

<i>Basic Information on the Model</i>	
Country	The Federal Democratic Republic of Ethiopia
Area of Intervention in value chain	Value chain integration (linking actors involved in input supply, production, processing, and marketing)
Mode of Intervention	Project
Implementer	Mennonite Economic Development Associates (MEDA)
Partner Organization(s)/Institution(s)	Canadian Department of Foreign Affairs, Trade and Development Regional Bureaus of Agriculture in Amhara and the Southern Nations, Nationalities, and People's Region (SNNPR)

2.1 General Description of the Model

(1) Background

Sustainable development of the rice sector calls for strong linkages among stakeholders operating in the different segments of the value chain, since these linkages help value chain actors operate at optimal capacity. In most of Sub-Saharan Africa, however, value chain operators work in a fragmented fashion and at small-scale; they are often isolated and disorganized. Above all, they are weakly linked with each other and this represents the key constraint to the healthy functioning of rice value chains in Africa, leading to the low competitiveness of the African rice sector.

In Ethiopia, rice production currently depends on approximately 300,000 subsistence smallholder farmers who practice traditional farming with limited use of modern inputs and usually on an average landholding of 0.5 ha per household.²⁵ These farmers produce rice primarily to meet their food needs, and sell their limited surplus, when available, at local markets or to processors, when they need cash.

Most of the rice processors are located in small towns near production areas, and operate at small-scale using machineries with low processing capacity. Their business operations often remain at under-capacity and/or non-expandable as their expansion would need sufficient liquidity to purchase additional paddy and information relating to where the extra supply of paddy is available.

Farmers are disorganized and scattered around a vast area where mills and processors operate – a fact that makes them unable to communicate in a timely way about the availability of their surpluses to those who may want them.

Due to these value chain inefficiencies, the price of locally produced rice is higher than that of imported rice. The latter effectively monopolizes urban markets and prevents local rice farmers from maximizing their profit from rice farming.

The Mennonite Economic Development Associates (MEDA), an international not-for-profit organization,²⁶ is currently implementing the “Ethiopians Driving Growth through Entrepreneurship and Trade (EDGET)” project to help address the situation. Funded by the Canadian Department of Foreign Affairs, Trade, and Development (DFTD), EDGET is a five-year pro-poor value chain development project, aiming at increasing incomes for 10,000 rice farmers and textile producers by facilitating access to growing markets, enhanced production techniques, appropriate technologies, improved input supplies and affordable support services, including financing.²⁷

²⁵ Ministry of Agriculture and Rural Development, 2010, National Rice Research and Development Strategy of Ethiopia

²⁶ <http://www.meda.org/about-meda>

²⁷ www.meda.org/about-edget

EDGET, which means ‘progress’ in Amharic, focuses on integrating smallholder rice farmers and small-scale textile artisans into higher-value markets through increased market linkages (including input, services and final markets) and enhanced productivity.

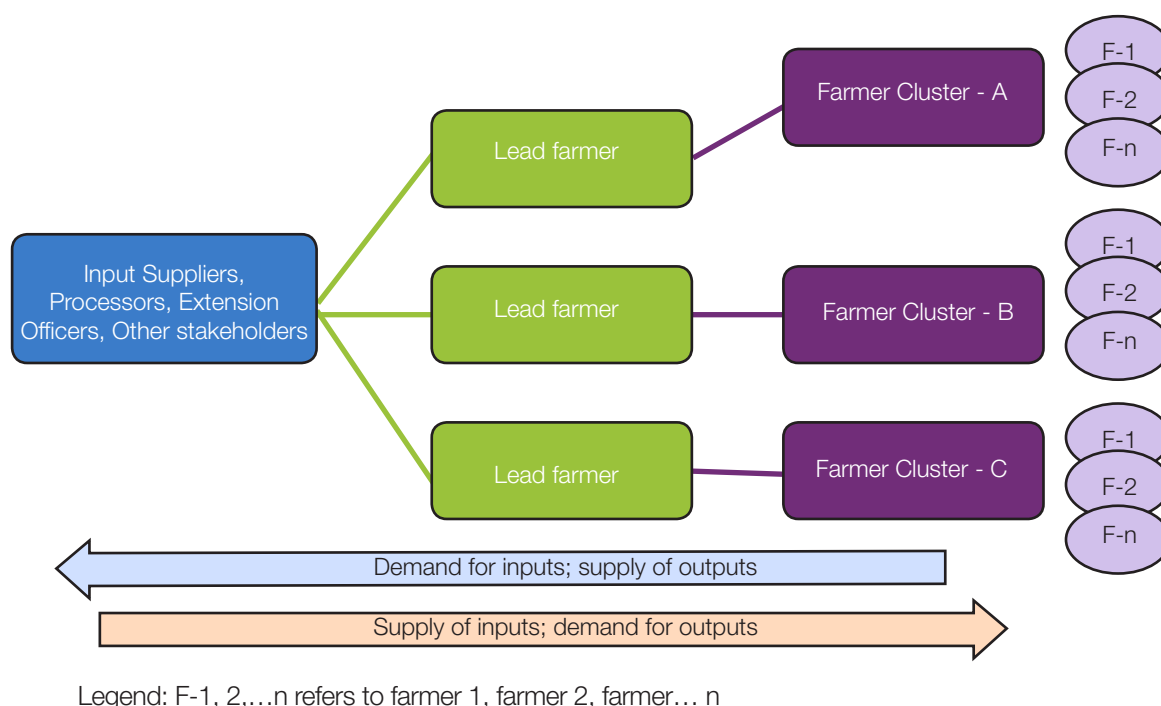
For the development of the rice sector in particular, the EDGET project provides target beneficiaries with commercial access to support services from local providers with the objective of ensuring the sustainability of these services after the project ends. Capacity building and linkage establishment feature prominently among the project activities that are implemented in the two major rice-producing regions of the country, namely Amhara Region and the Southern Nations, Nationalities, and People’s Region (SNNPR). Through a government-donor coordination platform, MEDA and the public administration of these two regions signed a memorandum of understanding that ensures the establishment of an enabling policy framework for the implementation of the project, especially in its business-oriented interactions with value chain actors.²⁸

(2) Specific activities in the model for value chain integration

In order to increase the efficiency and effectiveness of the rice value chain, the model focused on strengthening linkages amongst the value chain operators. This took place through various activities which include organizing key groups of operators into well-functioning collectives, developing capacities and strengthening communication channels, as well as providing technical backstopping and incentives for some service providers (such as local financial institutions) who would otherwise shy away from rice value chain engagement. Interventions were made across the rice value chain in a quite comprehensive manner.

As a first activity, the project established ‘farmer clusters’ in targeted production areas (Box 2.1).²⁹ An ad hoc committee, composed of farmer representatives, processor representatives, local community leaders and staff from the Regional administration in each cluster, selected a ‘lead farmer’ for each cluster. The selection was based on qualities such as trust-worthiness, honesty, progressiveness, working capital in farming activities and the leadership skills shown by the potential lead farmer in his/her interactions with other farmers. Under his/her leadership, farmers in a given cluster meet on a weekly or fortnightly basis to discuss various issues related to production, management of resources and marketing, and to identify possible solutions.

Box 2.1. Framework of linkages established under EDGET project



[Source]: Author's own elaboration

28 Rural Economic Development and Food Security Sector Working Group (<http://www.moa-redfs.gov.et>)

29 Manje L, 2012, *Rice processor-model farmer-producer operational model of MEDA*

The project identified local input suppliers and processors to work with each of the farmer clusters. The lead farmer from each cluster serves as a liaison between the farmer cluster and other value chain actors such as input suppliers, processors, and extension officers. Through this liaison, the farmers are able to inform service providers, such as input suppliers and rice millers, of their aggregate demand for inputs and the aggregate amount of paddy they plan to supply, while rice millers inform producers of expected prices and demand for paddy. The improved communication under the project contributed to improved predictability, and helped all actors to better plan and carry out their farming and/or business activities (Box. 2.1 for the framework of value chain linkage in the EDGET project).

To further improve and assure required rice supplies, the project mobilized experts and extension officers from the Regional Bureaus of Agriculture to conduct training programmes for lead farmers in each *woreda* (district) before and during the crop seasons. It is noteworthy that the project also used these training events to increase the level of interaction and familiarity among value-chain operators by inviting input suppliers, processors, members of the Village Savings and Lending Associations (VSLAs) and field officers (public extension workers, NGO and project-based staff) from the respective *woreda* to participate in them. As a result, the training events also served as a platform for interaction between farmers and other stakeholders resulting in effective vertical linkages being created amongst them. In addition, the EDGET project activities promoted competition among private sector players in their business operations, since the project interventions ensure information flows equally and openly to everybody, thus rice producers are associated with multiple rice millers and input suppliers.

The project also enhanced the availability of support services to producers, input suppliers and rice millers. The support services for producers include extension services by public and NGO extension agents, paddy collection, bulking and transportation by rice millers, those for processors include provision of soft loans by financial institutions and those for input suppliers include transportation and storage facility by rice millers and soft loans by financial institutions.

To address the issue of inadequate access to credit – a key constraint to the functioning of rice value chains – the project offered incentives to local financial institutions in the form of cost sharing and loan guarantees amounting to a maximum of 50% of loans extended to rice millers and input providers. This offer lowered the risk of total default by borrowers and increased the level of confidence that financial institutions extend to businesses involved in rice production and processing.

The project also developed two models of accessory combination for better processing operations (pre-cleaning, hulling and sorting functions into one machine).³⁰ Subsequently, the project identified Addis Ababa-based companies that import and retail processing machines, their accessories and spare parts, and made arrangements for them to meet the rice processors in the project areas. When processors are interested in purchasing such machines and/or try the models of accessory combination, the project offers processors cost sharing and loan guarantees under the EDGET Innovation Fund (EIF). In this way, processors have the opportunity to upgrade their machinery or to try the improved accessory combination and thus expand their processing capacity. This led not only to an increased amount of paddy purchased and processed, and thus to an expanded processing sector, but also to the stable and sustainable supply of spare parts and maintenance services. Processing machinery suppliers also benefitted from this new connection as they increased sales of machinery as well as their maintenance and spare parts procurement services.

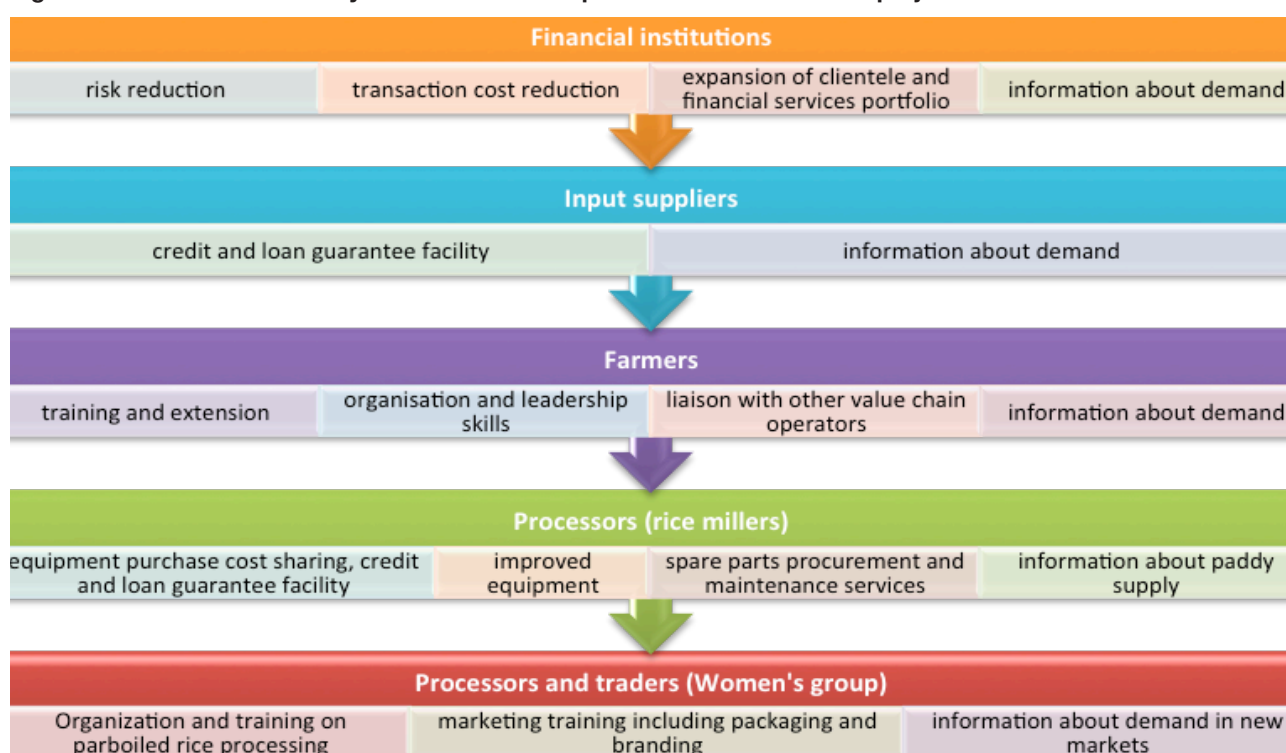
The project also provides marketing supports. Organized and trained in processing parboiled rice, women's groups are further offered technical backstopping in packaging and marketing. The project also assisted them in branding their product (called now *Addis Rice*), which led to its sale from 2013 in supermarkets in Addis Ababa. The sale of parboiled rice is quite profitable and the processed rice is air-shipped to Addis Ababa.

Thus the project has contributed to value chain integration through strengthening linkages amongst value chain actors, enhancing support services for value chain actors, while strengthening capacity of each value chain actor through training and technical backstopping.³¹

Figure 2.1 below summarizes the various types of support offered under the project to every main stakeholder of the rice value chain, while Table 2.1 presents the project's key design features.

30 MEDA, 2012, *Rice Value Chain Development Project - EDGET: Ethiopians driving growth, entrepreneurship and trade*

31 *Ibid*

Figure 2.1: Benefit received by each value chain operator under the EDGET project*

* Most benefits were brought by other value chain operators

Table 2.1: Overview of the EDGET Project

Project Title	Ethiopians Driving Growth, Entrepreneurship and Trade (EDGET)
Project Period	2010-2015
Implementer	Mennonite Economic Development Associates (MEDA)
Narrative Summary	<p><Purpose> Increasing income of rice farmers by 50% through facilitating access to growing markets, enhanced production techniques, appropriate technologies, improved input supplies, and affordable support services including finance</p> <p><Expected Outputs> Output 1: Farmer orientation & clients' selection and familiarization Output 2: Increased access to improved inputs and extension services Output 3: Improved infrastructure for processors Output 4: Improved access to information about local rice Output 5: Financial services for value chain actors</p> <p><Inputs> Input 1: Technical assistance through training, needs assessment and processing Input 2: Organization of value chain actors through embedded services Input 3: Financial assistance to processors and seed producers Input 4: Monitoring and evaluation of rice value chain</p> <p><i>Budget: 12 million Canadian Dollars (Jan'2011 – Dec'2015)</i></p> <p><Activities></p> <ol style="list-style-type: none"> 1) Clustering of farmers, input suppliers & processors 2) Capacity building of lead farmers, input suppliers and processors 3) Facilitation of financial access to processors and VSLAs 4) Rice consumption and trade surveys 5) Branding of locally produced rice

[Source]: MEDA, 2013, Semi-Annual Narrative Report: EDGET

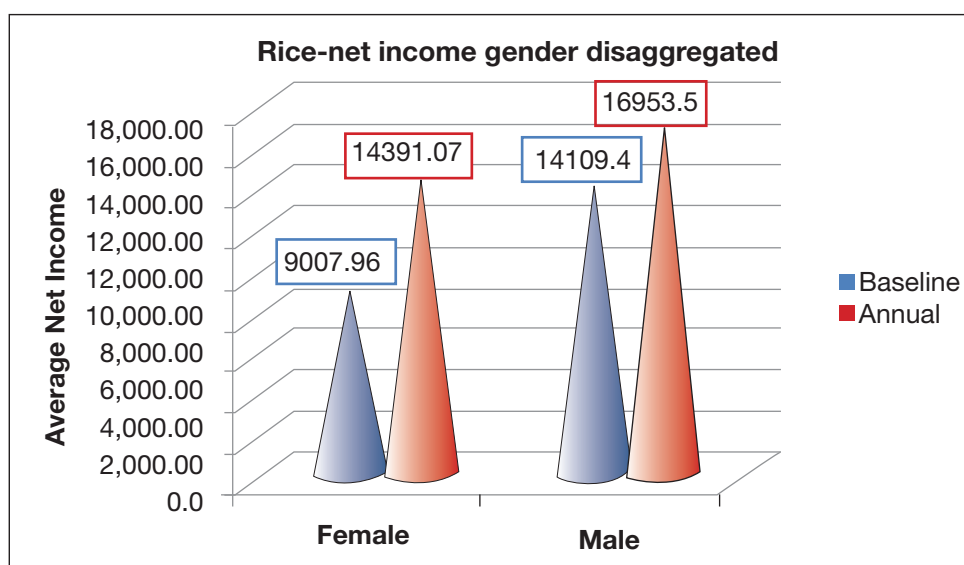
Despite the success mentioned above, the project faced a challenge in capacity development activities in rice farming. Due to the lack of technical expertise among the project staff, the project had not been able to provide high quality rice farming training to beneficiary rice producers. This challenge was, however, addressed through collaboration with other development partners such as Japan International Cooperation Agency (JICA) and Sasakawa Africa Association (SAA) who implement their projects in the EDGET project areas, with stronger technical capacity in rice farming practices. The EDGET project is also complemented by other donors such as the World Bank who work on development of large-scale irrigation schemes in the EDGET project area in Amhara Region. Thus activities by different stakeholders in the EDGET project areas complement with each other, and contribute jointly to the great impact.

2.2 Impacts

(1) Increased income of rice farmers

The project surveys show that the strengthened linkages among value chain actors have significantly improved the revenue of rice farmers. The average annual net income per farmer has increased from 12,584 Ethiopian Birrs (ETB) (equivalent to approximately USD 672)³² in 2010 to ETB 16,627 in 2013 (approximately USD 888) showing an increment of 32.12% in three years.³³ It is noteworthy that the impact on women farmers' incomes was double the one recorded for men farmers (Figure 2.2). As "early adopters", women farmers have proven being more willing than their men counterparts to try new varieties, pre-germinate seed to increase productivity, and intercrop so as to keep the soil fertile.³⁴

Figure 2.2: Increase in annual net incomes of male and female clients of EDGET project by 2013 (baseline: 2010)



(2) Improved access to quality seeds

Before the project started, farmer clustering in the project areas was quite rare and most farmers had limited or no interaction with other value chain actors. Since 2010, the project has formed 131 clusters, involving 8,000 rice producers, and helped link them with a total of 88 rice millers and a number of input providers.³⁵ As a result, rice producers in the clusters have better access to improved production technologies including improved seeds. For instance, some rice farmers in the EDGET project areas started purchasing certified seeds after clustering, albeit this practice was new to them. Records show that farmers also produced a total of 18.3 tons of quality declared seeds, and sold nearly half of it to their clusters in 2012 (Table 2.2).

³² ETB 1 is equivalent to USD 0.053441 (average exchange rate of the year 2013)

³³ MEDA, 2013, *EDGET: Ethiopian farmers, weavers on paths to success*

³⁴ *Ibid*

³⁵ MEDA, 2013, Semi-annual narrative report: *Ethiopians driving growth, entrepreneurship and trade*

Table 2.2: Improved production and sales of quality-declared seeds within farmer clusters

Variety	2010 Production of quality-declared seeds by rice farmers (in tons)	2012		
		Production of quality-declared seeds by 57 farmers after clustering (in tons)	Sale of farmer-produced quality declared seeds to cluster members (in tons)	% of seed production absorbed by cluster
X-Jigna	0	13.25	5.0	38%
NERICA 4	0	4.95	3.6	73%
Total	0	18.2	8.6	47%

[Source]: Elaborated by authors based on *EDGET: Ethiopian farmers, weavers on paths to success* (MEDA, 2013)

(3) Increased access to financial services

A total of 50 new VSLAs were established in the past two years in Amhara Region. These VSLAs now serve 50 rice farmer clusters, comprising 551 male and 206 female rice growers in *woredas* of *Fogera* (16 clusters) and *Libo* (34 clusters).

Further, in 2013, two processors in the *woredas* of *Yifag* and *Woreta*, also in Amhara region, and serving 11 farmer clusters, were able to access financial services thanks to the project support. Such services came from local microfinance institutions as well as EIF and specifically through the loan guarantee and the cost sharing scheme that it provides, envisaging a cost-sharing ratio of 15 (loan guarantee) - 15 (grant) - 70 (capital share required from processors). This financing availability enabled the purchase of improved processing machines and trial of new accessory combinations for better processing operations. This purchase had a strong demonstration effect and prompted other four processors serving 14 clusters to purchase the improved equipment and upgrade their milling capacities as well.

(4) Enhanced competitiveness of locally produced parboiled rice (Addis Rice)

The parboiled rice produced in the project areas has been branded as *Addis Rice* by the project and sold in supermarkets in Addis Ababa. *Addis Rice* is competitive compared with imported parboiled rice in terms of both quality and price, and has rapidly gained market acceptance despite the high cost of shipping by air. For example, while an initial six supermarkets agreed to provide space for *Addis Rice* on their shelves in February 2013, another seven supermarkets started selling *Addis Rice* by the end of March 2013. Since then, the demand for *Addis Rice* has increased dramatically to exceed the supply capacity, as of November 2013, of the women's groups producing *Addis Rice*.³⁶ Reports also show that due to the improved competitiveness of *Addis Rice*, the number of producer-to-processor linkages grew by 200%, with the five leading processors under the project having increased their aggregated throughput by 350%, from 1,000 tons to 3,500 tons.³⁷

2.3 Analysis of the Success Factors

The main factors that contributed to the success of the EDGET project are as follows:

(1) Strengthened value chain linkages

The project used the business motivation as an underlying driving force for strengthening vertical linkages among producers, processors, input suppliers and other value chain actors. While rice millers are assured of the constant supply of paddy in terms of quantity, producers are also assured of the sale of their produce without having to resort to middlemen. Furthermore, rice millers purchase quality-declared seeds from seed producing farmers and provide rice producers with the seeds before the cropping seasons,³⁸ and transport services for their

³⁶ *Ibid*

³⁷ *Ibid*

³⁸ Some rice millers in the project areas purchase farm inputs from input dealers, and provide them to rice farmers who have inadequate financial capacity. In return, the farmers sell paddy to those rice millers after harvest, and rice millers make payment to farmers for the paddy sold after deducting the cost for inputs.

produce after the harvest, thus providing business-driven solutions to farmers' problems – a fact that motivated the adoption of new technologies such as improved seed varieties and increases in productivity. Finally, the project helped strengthen linkages between rice millers and traders and between rice millers and suppliers of improved equipment, spare parts and maintenance services who are mainly located in Addis Ababa and would not otherwise have reached business terms with remote processors. This value chain integration assured the sustainable linkages between stakeholders operating in the rice value chain in the project areas.

(2) Establishment of incentive mechanisms for value chain engagement

The project effectively involved research institutions and extension officers from the Regional Bureaus of Agriculture in the delivery of its capacity building programmes. This is done by integrating the project annual work plans into those of respective public institutions,³⁵ and on the basis of a cost-sharing arrangement which enabled sharing of credits of project achievements. Further, by creating the cost-sharing scheme and the loan guarantee facility, the project provided effective incentives for financial institutions to expand their clientele and extend loans to rice value chain operators and for processors to upgrade their capacities and invest in improved technology. Thus the project played a catalytic role, activating the linkages between rice processors and financial service providers through stimulation by risk-mitigating interventions.

(3) Participatory selection of liaison persons

To determine the liaison persons, the project invited both farmers and processors in a given cluster to participate in the selection of lead farmers based on their assessment of certain qualities of the potential candidates such as their working capital, honesty, commitment to work with agent-cluster farmers, trust and respect earned in the locality, and technical and enterprising capacities. Such a participatory process involving both groups of stakeholders contributed to increasing the level of trust and familiarity between the two groups and strengthened and stabilized their relationships.

(4) Branding of locally produced rice

At project start up, there was no accurate information on consumer preferences relating to rice in Ethiopia. The project, therefore, conducted a national survey,³⁹ which established that consumers would prefer local rice and rice flour that can be mixed with the flour of *teff*, a staple crop in Ethiopia, and bake *injera*, traditional pan cakes. When parboiled and processed according to consumers' needs, locally grown brown rice would win consumers' preference over imported rice, especially when its price is competitive.

On this basis, the project branded the locally produced, parboiled rice as *Addis Rice* to be consumed as table rice in Addis Ababa,³⁵ while some parts of increased rice production in the project areas are used for local consumption as table rice or rice flour. The project has also supported small-scale processors in finding innovative ways of packaging *Addis Rice*. Such branding and marketing strategy has helped improve the competitiveness of local rice, enhanced its market demand, and thus energized the value chain linkages.

(5) Synergy with other interventions in the project sites

The EDGET project has attained synergies with other development projects implemented in its project sites. Being the largest rice-producing region in Ethiopia, Amhara is a home to ODA such as Farmer Research Groups II by JICA and other development supports such as Sasakawa Global 2000 (SG 2000) by SAA. Both are engaged in building capacity for rice production,⁴⁰ while the World Bank-funded Irrigation and Drainage Project is developing large-scale irrigation and drainage infrastructures on over 20,000 ha of land.⁴¹ These projects complemented well the value chain integration efforts of the EDGET project and were able to work in synergy with each other to give greater impacts, based on competitive advantages of each development partner: technical and agronomical elements by JICA and SAA, infrastructure development by World Bank, and value chain integration and marketing by the EDGET project.

39 MEDA, 2012, *Rice Consumption Taste Survey in Ethiopia*

40 Assefa E et al, 2011, *Empowering farmers' innovations*, Ethiopian Institute of Agricultural Research Publication

41 World Bank, 2013, Implementation Status & Results – Ethiopia - Irrigation and Drainage Project (P092353)

2.4 Scalability Assessment

Utilizing the *Scaling-Up Framing Questions* developed by IFAD in collaboration with the Brookings Institution, the scalability of the model for value chain integration experienced in Ethiopia was analyzed as presented in Table 2.3 below.

Table 2.3: Scalability Assessment

Framing Questions		
Ideas	What is the intervention to be scaled-up?	Value chain integration through linking value chain actors (a farmer cluster, farmer-input supplier, farmer-processor, processor-machinery providers, and processors-retailers)
	Whose idea?	Mennonite Economic Development Associates (MEDA)
	Has it been tested/piloted?	Yes, in Amhara and SNNPR Regions in Ethiopia
Vision	What could be the appropriate scale of the intervention?	The vision for scaling-up (the number of farmer clusters, processors and the ratio, among others) needs to be decided by the country to replicate the model. Several factors determine the ideal scale, including the number of rice producers in the country who do not have direct access to markets, domestic demand for rice, policy priority on commercial rice production, existence of development partners and available financial and fiscal resources.
Drivers	What or who are the drivers for the scaling-up process ahead? (including local leaders or champions, external catalysts and incentives)	<p>Leadership – Government, value chain actors</p> <p>Demand for market linkages – Farmers’ organizations, visionary rural entrepreneurs (processors, traders, input suppliers), and financial institutions.</p> <p>Incentives – Viable paddy markets for producers, viable rice markets for traders and processors, input markets for input suppliers, new business opportunities for financial institutions</p> <p>Champions/External Catalysts – MEDA and DFTD, and/or other interested development partners</p>
Spaces	Fiscal/Financial	Although most of the long-term investments are to be borne by private stakeholders (processors, suppliers, financial service providers and farmers), the budget allocation for liaison meetings and capacity building needs to be covered by local/national public institutions. Therefore, the financial capacity of the central/regional government interested in adopting this model is the critical determinant for this space. However, the space could exist in most Sub-Saharan African countries, since required resources cannot be significantly large. The cost for other project activities is large, accounting for the most part of the project budget. Governments interested in adoption of the model need, therefore, to find development partners who can financially assist them in order to create the financial space to adopt the model.
	Natural Resource/environmental	An important prerequisite for successful replication of the proposed model in other countries is the availability of agro-climatic conditions that are suitable to commercial (profitable) rice production and marketing.

Framing Questions		
Spaces	Policy	National policies that encourage proactive participation of private stakeholders in rice sector development are fundamental along with deregulated and transparent pricing policies for farm inputs and paddy. Further, supportive policies for micro finance institutions and rural banks to engage confidently in agriculture financing are required. It is clear that the existence of operational financial institutions in rural areas is also a <i>sine qua non</i> for the successful replication of the model.
	Capacity	Critical conditions for integrating the value chain actors include: (i) technical capacities in rice production and processing; (ii) business management skills; (iii) collective bargaining/negotiation skills of producers; (iv) marketing skills, and; (v) organizational capacities of local institutions in providing training and monitoring & evaluation of linkages. Even though some African countries may not have capacity in all of these areas, the capacity space can be created or expanded in partnership with development partners who can provide technical backstopping in respective areas of their competence and specialization.
	Political	Determinants of political space for scaling-up this model include; (i) National political support for private sector-led rice development, and (ii) Local political support, and no political interference in identifying lead farmers and liaising with other value chain actors on the basis of common interests of the rice farmers in given clusters.
	Cultural	Consumer demand for locally produced rice (as judged from their competitive features such as color, aroma, taste, price, etc.) should exist in the targeted countries as this serves as an important unifying force for value chain actors.
	Partnership	Since this model can benefit a number of actors in the value chain, it can be reasonable to assume that there is a partnership space in most Sub-Saharan African countries, with local governments, micro finance institutions, input suppliers, processors and other private value chain actors. The partnership space also exists with development partners who are interested in private sector-led and/or market-oriented agriculture sector development.
Pathways	What are the pathways for scaling-up in other countries?	Clustering of farmers → identification of lead farmers → technical and financial capacity building and liaising of 'local' value chain actors (farmers, local processors, input suppliers, etc.) and value chain supporters (extension officers, researchers, local administration) → self-sustenance of business driven linkages However, the details of pathways are to be defined in the contexts of the countries which are interested in adopting this model
	What is the time frame for pathways to extend?	Three years or above, depending on the spaces available in the targeted countries, and the desired scale.
	How do the drivers and spaces define these pathways?	It depends on the contexts of those countries interested in adopting the model.
	Bottlenecks for scaling and risk mitigation.	Prevalence of subsistence farming, lack of conducive business environment, politicization of selection of lead farmers, slow pace of financial transactions, and absence of legal supports for contract violations.

2.5 Conclusions

The EDGET project has promoted value chain integration by strengthening linkages amongst value chain actors, while strengthening their capacity. In addition, the project expanded the market outlets for the rice produced in the project areas by branding and strategic marketing. The strengthened linkages among the value chain actors based on commercial interest and business relationships provide sustainability as farmers can access market information, and the input suppliers and processors are able to readily access their clients (rice farmers). While on the right track in terms of exit plans, the model will require further nurturing before linkages are 100% self-sustaining and completely in the hands of private sector value chain actors. The model raised the competitiveness of locally produced rice and the incomes of 8,000 smallholder rice farmers in Amhara and SNNPR Regions in Ethiopia. However, it is far from having reached desired scale, and this model could definitely benefit rice farmers in other countries where vertical linkages in the rice value chain are weak and stakeholders in the value chain are fragmented.

However, it is important to note that successful replication of the model will require the following favourable conditions: (i) the availability of conducive policies that encourage private sector participation, market-determined prices for farm inputs and outputs, and accessibility to financial products and services for small and medium rural agricultural service providers; (ii) the local rice production has potential for market-oriented farming, rather than self-consumption, and locally produced rice needs to have clear and proven competitive advantages in the mainstream markets;⁴² (iii) no political interference in the clustering of producers and selection of lead farmers; and (iv) the availability of local/national public institutions such as research and extension units that can collaborate to constantly invigorate the integration process through capacity building of the various value chain actors.

42 In a price sensitive market, competitive advantages of local rice could be represented by a mixture of low price and consumer preferences such as grain color, taste and aroma, among others.

CASE 3:

Promotion of Smallholders' Access to Land and Sustainable Land Use in Togo

Basic Information of the Model	
Country	The Togolese Republic
Area of Intervention in value chain	Improved access to land, coupled with supports for modernization and intensification of agricultural production systems (including rice)
Mode of Intervention	Project
Implementer	Ministry of Agriculture, Livestock and Fishing (MAEP); Directorate for Rural Development and Infrastructure (DAER – <i>Direction de l'Aménagement et de l'Équipement Rural</i>)
Partner Organization(s)/institution(s)	West African Economic and Monetary Union (WAEMU) and the Government of India (financial assistance for the purchase of equipment)

3.1 General Description of the Model

Togo went through a profound socio-political crisis between 1990 and 2005 that caused an upsurge in prices of basic consumer goods, and eventually slowed the country's growth rate. This, in turn, affected significantly the livelihood of smallholder farmers and worsened rural poverty rates in particular. To address this issue, the Government of Togo decided to put greater emphasis on the development of the agriculture sector as a major lever for increasing revenues of rural households.

Meanwhile, rice received increasing attention in Togo, being the third most consumed basic cereal after maize and sorghum. Rice production increased from 62,306 tons in 2000 to 85,540 tons in 2008 at an annual growth rate of 4%.⁴³ Nonetheless, the pace of increase in consumption exceeds that in production and the country imports a significant amount of rice every year. According to FAOSTAT, the annual average of approximately 63,784 tons of rice was imported from 2000 to 2008,⁴⁴ and the cost for annual rice imports during the same period could be estimated at approximately USD 15 million, given an average rice price in international markets of approximately USD 239.⁴⁵ Rice sector development became one of the government's top priorities in agriculture policy, and the Government of Togo launched the National Rice Development Strategy (NRDS) in 2010 with the objective to more than double the rice production,⁴⁶ which was also adopted in the National Agricultural and Food Security Investment Programme (PNIASA), the CAADP investment plan for Togo.⁴⁷

Among the government strategies for the development of rice, and subsequently the whole agriculture sector, was the promotion of smallholder farmers' access to land, given the fact that only 40% of total cultivable land available (equivalent to 3.6 million ha) is actually being utilized in an effective manner. It was in this context that the project for Planned Agricultural Development Areas (ZAAP – *Zone d'Aménagement Agricole Planifié*)⁴⁸ started in 2009. Its main objective was to increase land access by farmers, especially rice producers, and realize modern land ownership exploitation of larger agricultural areas in a modern manner through secured land ownership, better water management, and the establishment of small processing units.

43 FAOSTAT <http://faostat3.fao.org/faostat-gateway/go/to/home/E>

44 *Ibid*

45 The figure was estimated by the author based on the data retrieved from the World Data Bank Global - Economic Monitor (GEM) of the World Bank. <http://data.worldbank.org/data-catalog/commodity-price-data>

46 Ministère de l'Agriculture de l'Élevage et de la Pêche, République Togolaise, 2010, *Stratégie Nationale de Développement de la Riziculture (SNDR)*

47 Ministère de l'Agriculture de l'Élevage et de la Pêche, République Togolaise, 2010, *Programme National d'Investissement Agricole et de Sécurité Alimentaire – PNIASA - Plan d'Investissement 2010-2015*

48 Government Ordinance No. 78-18 creating the Planned Agricultural Development Areas project, which began operations in 2009. Refer to Table 3.1 for the project details.

As a first activity, the ZAAP project developed (clearing and first tillage) land pieces of 50 ha each, and provided to groups of smallholder farmers in order to secure their land ownership and land-use rights and create appropriate environments in which farmers' competitiveness is strengthened to significantly increase the rice production and yield.

The development and transfer of land under the ZAAP project are carried out through a consensual process, involving governmental authorities, landlords, customary leaders, producers and inhabitants of areas concerned. The following are steps adopted in the ZAAP project:

- i) The Government identifies available (non-utilized) plots of land and submits a transfer request to landowners for the land exploitation through its local administration offices;
- ii) Upon receipt of the request, landowners and customary leaders provide their comments on land transfer requests, in compliance with local practices and customs related to land management;
- iii) In the event of a positive reaction from landowners and customary leaders, local administrative authorities prepare land transfer contracts which define all practical terms and conditions of the transfer;
- iv) Upon receipt of the contracts signed by all relevant parties, local administrative authorities proceed with planning the development of plots of land and set forth exploitation procedures so that smallholder farmers are able to exercise their land use and tenure rights over the land;
- v) In order to obtain formal land allocation, however, farmers need to form groups with membership comprising 5-25 persons. Each member is eventually given a plot of land, the size of which ranges from 0.25 to 1 ha. The allocation of the individual plots takes place on the basis of a blind draw.

In addition to land allocation, the project enables farmer groups' access to farm inputs,⁴⁹ credit services through a credit line established at the Regional Solidarity Bank,⁵⁰ and farm machinery procured by the Government⁵¹ for promoting agriculture mechanisation and modernization.

It is also important to note that an on-site manager, employed by land developers, monitors land use as well as all technical and operational matters relating to ZAAP, with the support of two volunteers⁵² appointed by the Government at each ZAAP site.

In summary, the main pillar of the ZAAP project is to secure land tenure through contracts between landowners, land users (farmers) and the State, while this pillar is coupled with six other pillars for supporting farmers as shown by the project activities in Table 3.1 below.

⁴⁹ These include seeds, agro-chemicals, fertilizers and agrochemical sprayers, among others.

⁵⁰ Farmers' groups and unions submit a collective request for credit, which is repaid in cash at the end of the agricultural seasons. All group members are jointly liable for credit repayments.

⁵¹ These may include tractors, mini-tractors, non-motorized cultivators, ploughs, winnowing machines, and rice grain seeders.

⁵² Volunteers are provided by *Programme de Promotion du Volontariat National au Togo*/Togo's National Voluntary Participation Promotional Programme (PROVONAT)

Table 3.1: Summary of the ZAAP Project

Project Title	Development of Planned Agricultural Areas (ZAAP) in Togo
Project Period	2011 –2016 (5 years)
Implementer	Ministry of Agriculture, Livestock and Fishing (MAEP)/Directorate for Rural Development and Infrastructure (DAER – <i>Direction de l'Aménagement et de l'Équipement Rural</i>)
Narrative Summary	<p><Purpose of the project > Promote smallholder farmers' access to land and their modern and sustainable land use.</p> <p><Expected Outputs> Output 1: Development of at least 200 ha of ZAAP per canton, and a national total of 5,000 ha in five years. Output 2: Halving rice importation by Togo.</p> <p><Activities></p> <ul style="list-style-type: none"> (i) Securing land tenure through contracts between landowners, the farmers/ exploiters and the State, (ii) Modernizing production systems through the promotion of motorization along the valuation chain, (iii) Improving the water control and management, (iv) Facilitating the access to credits by setting up a credit line (CFA Franc 200,000,000 at the Regional Solidarity Bank) (v) Organizing/structuring the commercialization activities by promoting the emergence of private service providers at the local level (vi) Promoting solidarity (vii) Integrating the natural resources and the environment preservation and protection aspects into rice production. <p><Inputs></p> <p>1) Internal Resources: Budget for land exploitation amounting to CFA Franc 500 million (equivalent to approximately USD 1.01 million)⁵³ per year, together with the budget for recurrent expenditure (e.g. salary of government staff, cost for their mission) provided through the DAER's running budget.</p> <p>2) External resources:</p> <ul style="list-style-type: none"> - The Government of India provided a budget of USD 6 million for the purchase of equipment, - West African Economic and Monetary Union (WAEMU) provided a budget of USD 7.2 million for the development of 1,000 ha of land.

[Source]: MAEP, 2013, *The DAER annual report 2012*

3.2 Impacts

Land development and transfer usually involve long processes. Therefore, the first project results materialized only recently even though the ZAAP project started in 2011. Nonetheless, some evidence of impact was observed in the survey on 'Land Security for small farmers in Togo' conducted in July 2012.⁵⁴ The survey shows that the ZAAP project has significantly improved small producers' access to land when the scheme is implemented in favourable conditions.

The survey revealed that, in one year, the project newly developed 650 ha of land now owned by 573 farmers, including 400 rice growers, who account for an annual production of about 375 tons of rice. The total business

⁵³ The average exchange rate in 2013: USD 1 = CFA Franc 494.12178

⁵⁴ Ministry of Agriculture, Livestock and Fishing (MAEP), Togo, 2012, *Sécurisation foncière pour les petits producteurs au Togo*

turnover of rice production is estimated at CFA Franc 61.6 million (equivalent to approximately USD 125,000), and the average revenue per rice farmer per farming season is estimated at approximately CFA Franc 150,000 (approximately USD 303).

In five of the ZAAP sites, farmers formed a total of 23 groups with each group comprising an average of 21 members. Also as shown in Table 3.2 below, the ZAAP project pays considerable attention to reaching a gender balance as women represent 46% of the total number of group members, which can be considered a significant contribution to expanding women farmers' access to land.

Table 3.2: Overview of the ZAAP operation in Togo

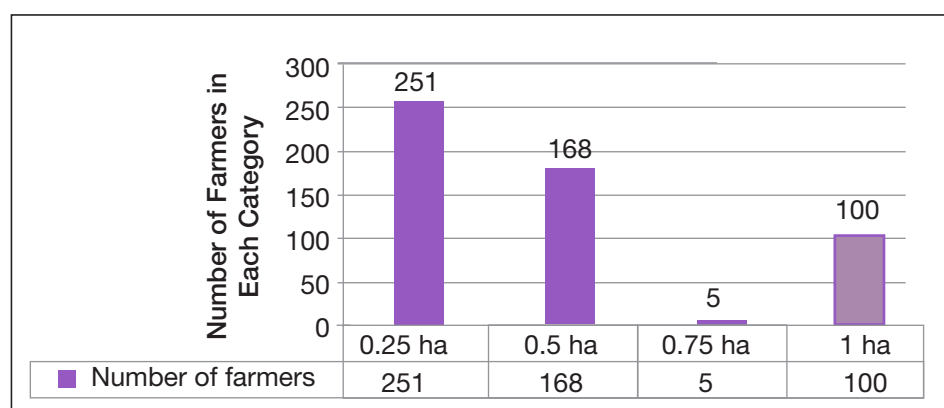
ZAAP Sites	Number of groups in the site				Members			Cultivated Crops
	Men	Women	Mixed	Total	Men	Women	Total	
Sadori	0	2	3	5	43	77	120	Rice
Leon	1	0	3	4	67	8	75	Rice
Beme	0	0	7	7	63	87	150	Rice
Avétonou	0	0	3	3	34	10	44	Maize, Rice
Game-Lili	0	0	4	4	45	39	84	Maize, Rice, Cotton
Total	1	2	20	23	252	221	473	

[Source]: Survey on securing land access for small producers (*Etude sur la Sécurisation foncière pour les petits producteurs*), (MAEP, July 2012)

As mentioned earlier, the size of a single plot of land in the framework of the ZAAP project varies from 0.25 to 1 ha. As shown in Figure 3.1 below, 81% of tenants in ZAAP own land plots that are smaller than the national average (0.85 ha).

Although plot size can be a decisive factor for achieving household food security, the ZAAP project overcomes this limitation by creating optimal conditions for intensification of rice production through the supply of farm inputs, financial services, distribution of farm equipment, technical support and dissemination of improved farming practices provided by the Directorate for Rural Development and Infrastructure (DAER – *Direction de l'Aménagement et de l'Équipement Rural*),⁵⁵ while the Regional Solidarity Bank (BRS – *Banque Régionale de Solidarité*) provides financial services to rice-producing tenants in ZAAP sites. These means help modernization and intensification of the rice production system in ZAAP sites to a great extent, and enhance acceptance of ZAAP by rural populations.

Figure 3.1: The number of farmers and allocated plot size in ZAAP sites



[Source]: Survey on land access securing scheme in favour of small producers (*Etude sur la sécurisation foncière des petits producteurs*), July 2012.

⁵⁵ Supplied inputs include seeds, chemical fertilizers, production materials (agricultural machines), and agrochemical sprayers, among others.

Despite the short period of time since its launch, the ZAAP project made significant achievements, and on this basis, the Government of Togo decided to scale up the project. The national implementation plan for ZAAP was prepared envisaging the development of 1,000 ha of ZAAP per year, for five years, to reach a target of 200 ha of ZAAP in each canton of Togo.

3.3 Analysis of the Success Factors

The following factors determined the success of the model:

(1) Strong political commitment by the Government

Strong political commitment was a significant driver of the success of the model, and led to establishing important enabling conditions. This commitment was demonstrated by the prompt mobilization of the project annual budget of CFA Franc 500 million (approximately USD 1 million) as well as the transfer of State-owned land plots to farmers such as those distributed in the areas of Avétonou and the Gamé-Lili.

(2) Consensual transaction

Land transfers were carried out on the basis of a consensual process that involved consultations with State representatives, landowners, customary leaders and the community members inhabiting the concerned areas. This enabled all stakeholders' views and opinions to be incorporated in the decision making and be reflected in the conditions for land transfer. In this way, reaching agreement with all concerned parties in a satisfactory manner mitigated the risk of land-related disputes arising after the transfer.

(3) Contract-based land transfer

Land transfers in ZAAP were carried out based on formal contracts which clearly defined terms and conditions for the transfer of land from private owners to the State, and then from the State to farmer groups. Critical terms in contracts included the size of the plot, duration of the tenure, and the deadline for renewal of the terms of the contract. In case of land lease, the amount of the land royalty was also clearly stated in the contract. The ZAAP project also provided reassurance to landowners through provision of legally incontestable documents defining their land ownership, by which landowners accept to give their lands on lease/tenure to the State with their full satisfaction.

(4) Existence of traditional mechanisms for land dispute settlement

In Togo, there are traditional mechanisms for settling land disputes⁵⁶, which are used for the management of customary land in each village, and help secure rural land ownership. The existence of these mechanisms gives villagers confidence to envisage a positive outcome from any transaction, and enabled setting up villagers' dialogue forums for ZAAP purposes.

(5) Provision of technical, organizational and financial supports to producers

Farmers are supported by the Government of Togo through DAER with the provision of farm inputs and equipment. Regional Solidarity Bank also supported farmers by setting up special credit lines to provide farmers with necessary financial services. As these supports were key to maximizing the impact of increased farmers' access to land, the on-site manager and his/her small team were recruited at each project site and they made sure that farmers received the financial, technical and organizational supports, which translated into increased capacity and productivity.

3.4 Scalability Assessment

Utilizing the *Scaling-Up Framing Questions* developed by IFAD in collaboration with the Brookings Institution, the scalability of the ZAAP approach to other countries was assessed as presented in Table 3.3 below.

⁵⁶ 90% cases of land disputes are related to borders issues, and 10% of them arise from the grabbing of land that belongs to teenage children following the death of their parents.

Table 3.3: Scalability Assessment

Framing Questions		
Ideas	What is the intervention to be scaled-up?	Improving smallholder farmers' access to land
	Whose idea?	The Government of Togo
	Has it been tested/ piloted?	Yes, the pilot is being implemented with satisfactory results (as of 2013), even though the ZAAP project just launched in 2011.
Vision	What could be the appropriate scale of the intervention?	Currently, the Government of Togo aims at developing about 200 ha of unused land in each canton of the country. In other countries, the scale would depend on the availability of cultivable land not in use, agro-climatic conditions that are favourable to rice cultivation, market space, fiscal and financial capacity, institutional capacity and, last but not least, political vision and commitment, which are necessary pre-requisites to give policy priority to the replication of the model.
Drivers	What or who are the drivers for the scaling-up process ahead? (including local leaders or champions, external catalysts and incentives)	<p>Market Demand – Increased demand for agricultural produce and high food price in markets put pressure on African countries to increase agriculture production. Thus it can be a driver for adoption of the ZAAP /similar approach in countries with undeveloped cultivable land.</p> <p>Government – Food insecurity of a large section of the population and dependence on food imports can exert pressure on governments to issue policies and develop programmes that increase cultivation of land, and the government therefore can be a strong driver to replicate this model in most African countries.</p> <p>Development Partners – Improving farmers' land access and capacity to produce food can contribute to achieving the MDG goal No. 1, thus interested development partners can be drivers for replication of the model in other countries.</p>
Spaces	Fiscal/Financial	Land development and transfer procedure are costly undertakings, thus financial space for scaling-up this model might be limited in most African countries which generally lack sufficient financial capacity. However, this limitation can be overcome through partnership with local and international financial institutions, donors and other development partners.
	Natural Resources/ Environment	In the natural resource dimension, a prerequisite for scaling-up this model is the availability of unused arable land. The environmental impact of expanded and intensified land exploitation needs to be adequately assessed and a risk mitigation plan should be designed, implemented and carefully monitored.
	Policy	The model requires a supportive policy environment that stems from strong political will and commitment on the part of the government to the model's success. Also, the existence of appropriate legal framework and enforcement in land-related legislation (e.g. land law, land registration system, regulations over land exploitation, use and ownership) are prerequisites to determine the policy space for scaling-up the model.

Framing Questions		
Spaces	Capacity	Organizational, institutional, and technical capacity of respective authorities in land transfer is necessary for replication of the model. Capacity space could be created even in short run, if the countries can receive supports from development partners.
	Political	Political support to expansion of cultivation area and land distribution to poor farmers is required from government at all levels as well as customary leaders, communities and landowners inhabiting targeted areas. This is the prerequisite to determine the political space.
	Cultural	Contract-based land transfer is a necessary condition for replicating the model, and it determines the cultural space. Further, a well-functioning enforcement mechanism (be it traditional or formal) should be in place.
	Partnership	Partnership spaces exist in countries where development partners and/or other stakeholders have interest in increasing farmers' access to land and/or security in land use. In implementation, the partnership with local service providers should be explored for sustainability.
Pathways	What are the pathways for scaling-up in other countries?	Pathways are to be determined by countries replicating the model. Nonetheless, the model should be piloted, before it is brought to wider scale.
	What is the time frame for pathways to extend?	The area of available unused land for exploitation, and government vision on the scale determines the time frame. Also, the time frame for the adoption of the model depends on appropriateness of the existing legal framework in the interested countries in relation to land ownership, exploitation, use and ownership transfer. If an adequate legal framework does not exist, the government has to set it up before replication of the model, thus the time frame would be longer. At any rate, the Togolese experience shows that the piloting the model and scaling it up within the country should take at least three to five years.
	How do the drivers and spaces define these pathways?	
	Bottlenecks for scaling and risk mitigation.	
		Risk of environmental destruction should be mitigated by thorough Environmental Impact Assessment and careful implementation and monitoring.

3.5 Conclusions

Despite still being at the pilot stage, the ZAAP model in Togo is showing remarkable results in terms of food security and income generation and has the potential to be replicated in other Sub-Saharan African countries where the area of cultivated land is below the exploitable potential. However, before deciding in favour of its replication, it is important to take its prerequisites in consideration: (i) availability of potential cultivable land currently not in use; (ii) strong political commitment at all level of implementation and supportive land policies, legislation and regulation; (iii) a cultural context that supports conformity with formal contracts and effective formal and/or traditional mechanisms for contract conformity and law enforcement in the target areas; (iv) availability of local service providers that are able to provide the support that agricultural intensification requires; (v) local administrations' capacity to effect land transfer transactions and manage potentially detrimental impacts on the environment derived from expansion and intensification of cultivation, and; (vi) availability of development partners interested in providing financial and technical assistance and "staying the course" until the desired scale is reached, in case fiscal and financial space is limited within the country.

In addition, it is also important to pay particular attention to the following aspects for successful adoption of the model in other countries:

- i) It is advisable to involve local government authorities in the design of the intervention, particularly when estimating arable lands under their jurisdiction and identifying owners of land plots with high agricultural potential.
- ii) As the model shows in Togo, the impact of land transfer could be maximized through coupling with supports to intensification of farming systems, such as improving farmers' access to farm inputs and finance.

CASE 4:

Sustainable Participatory Irrigation Management in Madagascar

<i>Basic Information of the Model</i>	
Country	The Republic of Madagascar
Area of Intervention in value chain	Reorganizing and strengthening Water Users' Associations (WUAs) and their federation, operation and management of irrigation facilities
Mode of Intervention	Combination of project and public service provision
Implementer	Ministry of Agriculture; Directorate for Rural Development of Alaotra-Mangoro Region, the Directorate of Rural Engineering Services both at national and regional level, Tsaravoy Federation (the federation of WUAs)
Partner Organization(s)/Institution(s)	Japan International Cooperation Agency (JICA), private local contractors

4.1 General Description of the Model

(1) Background

Generally speaking in Sub-Saharan Africa, the sustainable management of irrigation schemes is one of the most critical challenges. Availability of sufficient water is the prerequisite for the successful irrigated rice farming, and good management of irrigation facilities is the key for the sustainable distribution of sufficient amounts of water. In many irrigation schemes in Africa, however, water users do not have adequate capacity to properly manage and maintain irrigation facilities, even when grouped into associations. This often results in rapid degradation of irrigation facilities and thus partial or total malfunction of the schemes. In some unfortunate cases, irrigation facilities are terribly degraded only a few years after the construction/rehabilitation, and irrigation schemes fall in need of substantial technical and financial intervention by outsiders for their recovery. Although public sector assists water users in better management of irrigation schemes in many countries, the African governments often have limited financial and technical capacity and are therefore unable to provide satisfactory support to water users.

Madagascar is no exception, and the issue of poor irrigation management prevails. The country engaged in a series of rehabilitation works at irrigation schemes (mainly for rice production) in the 1980s - the most important ones during the two phases of a nationwide programme "*Petits Périmètres Irrigués*" (Small Irrigation Scheme Programme or PPI). Since the implementation of PPIs, the poor maintenance of irrigation schemes has remained the most crucial issue for irrigation rice farming in Madagascar.

(2) PC-23 irrigation scheme

PC-23 is one of the irrigation schemes comprising the large irrigation rice scheme cluster in the Alaotra-Mangoro Region of eastern Madagascar.⁵⁷ It is located in the southwest quadrant of the Lake Alaotra, which is characterized by the plain formed by a number of rivers including the Sahabe and the Sahamilahy. The southwestern part of the lake is a vast marshland and the Sahabe (903km² of the watershed) and the Sahamilahy (249km² of the watershed) are the main water sources of PC-23. This area is considered as the rice granary of Madagascar and has a total extension of 36,800 ha covering both the lowlands and the uplands. The Lake Alaotra is located in the downstream of PC-23.⁵⁸

The development of the area initially started in 1951 with the assistance of SOMALAC (*Société Malagasy du Lac*

⁵⁷ PC stands for "*Périmètre de Colonisation* (Colonial Irrigation Scheme)", named back in the colonial period.

⁵⁸ JICA, 2008, *Project for Improvement of the Irrigation System in the South-West Region of Lake Alaotra*, ESA Preliminary Study

Alaotra), a large public development company. SOMALAC supported water users of PC-23 in numerous areas such as improvement and extension of the irrigation network, the operation and management of the irrigation and drainage facilities, agricultural intensification through extension service provision and input supply, and post-harvest activities. The SOMALAC supports were extensive, and as a result, rice farmers in PC-23 became dependent on them, and lost their self-help initiative and capacity in irrigation management.

Farmers' dependency on SOMALAC unfortunately caused a serious setback in the area for development based on farmers' self-reliance. Farmers in PC-23 faced difficulties, particularly when SOMALAC, like many other state-owned companies at that time, was dissolved in the 1990s in the context of structural adjustment. The withdrawal of SOLAMAC was so abrupt that the Water Users' Associations (WUAs) in PC-23 were left virtually on their own without any transition period or sufficient financial and human capacity to continue the operation and management of PC-23.⁵⁹ Inadequately prepared for this sudden withdrawal, the water users of PC-23 could not operate functionally and manage the irrigation scheme, and this led to rapid deterioration of the irrigation and drainage networks as well as the dissolution of WUAs themselves. A JICA report⁶⁰ pointed out that a large number of tertiary irrigation blocks (200 ha per block on average) availed of very limited or no water supply. In fact, more than 70% of PC-23 had large shortfalls in water supply for nearly ten years, and the collapse of the bank of the Sahabe dam in 2010, which caused the deviation of the river from its original course, made the situation even worse. Sedimentation was observed in the whole irrigation system in PC-23 to a critical degree, preventing smooth water flow. While the land plots were underused due to the lack of irrigation water caused by the disrepair, some farmers of PC-23 started building small houses on the unused farm plots and began to regularly practice cropping on the secondary canals without any authorization. Thus, the farmers' lack of self-reliance in terms of irrigation scheme management and the quick withdrawal of public sector interventions resulted in further disrepair of the irrigation network.

(3) JICA support for rehabilitation of irrigation schemes

To support rice producers in non-functional irrigation schemes, JICA planned to provide the Government of Madagascar with a combination of assistance (a highly concessional Japanese yen loan, grant aid and technical cooperation) in some irrigation schemes around Lake Alaotra. These JICA supports aim to: i) rehabilitate the target irrigation scheme, ii) protect and rehabilitate the deteriorated watershed, and iii) disseminate improved rice cultivation practices. Initially, the technical cooperation project was planned to cover the dissemination of improved rice cultivation practices, while the rehabilitation of the irrigation scheme and watershed was to be carried out under the grant aid and the concessional loan. Against this backdrop, the technical cooperation project PAPRIZ (the Project for Rice Productivity Improvement in Central Highland)⁶¹ commenced in January 2009, as initially planned. The JICA supports through the concessional loan and grant aid were, however, suspended at the preliminary study stage due to the political turmoil that took place in Madagascar in 2009. Given the political confusion, resumption of the grant aid and the concessional loan was not possible at least for a few years, and it is against this background that JICA decided to support farmers in partial rehabilitation of PC-23 through its on-going PAPRIZ project, in order to ensure the water supply to the verification sites for the technical package introduced by the PAPRIZ project.

(4) Rehabilitation works at PC-23 with the JICA support

As shown in Table 4.1, the rehabilitation works started in 2010 on the weirs located at the upper stream of the headwork, followed by dredging around the headwork in 2011. The PAPRIZ project took the following steps to deliver its assistance:

- i) Involvement of central and local government authorities with a catalytic role by the PAPRIZ staff

Cognizant of the important roles the public authorities can play in sustainable irrigation management, PAPRIZ staff tried to increase the involvement of both central and regional government authorities in the management of PC-23. The roles of the Regional Directorate for Rural Development (DRDR – *Direction Régionale du Développement Rural*) of Alaotra-Mangoro Region in this regard were clearly defined as oversight and monitoring. Similarly, the roles of the National Directorate of Rural Engineering as well as the Regional Service for Rural Engineering (SRGR – *Service Régionale du Génie Rural*) were clarified as supporting WUAs and the

59 The budget allocation and assigned staff for major irrigation schemes was drastically reduced under the structural adjustment programme implemented in Madagascar supported by IMF, World Bank, African Development Fund and some bilateral donors.

60 JICA, 2008, *The Study on Rural Development and Watershed management in the South-West Region of Lake Alaotra*, The study was conducted from 2003 to 2008.

61 PAPRIZ stands for *Projet d'Amélioration de la Productivité Rizicole sur les hautes terres centrales de Madagascar*

federation of WUAs in cost assessment. Fundamental to this was the commitment of the Government to the principles behind participatory irrigation management and to making the transfer of irrigation management responsibilities to water users a reality.

The PAPRIZ staff worked as the glue that kept all partners together at the start-up phase, and provided only discrete technical inputs and minimal financial supports when implementation processes gained momentum and fed off their own dynamics.

ii) Restructuring of WUAs and their federation

The most important assets that the farmers of PC-23 lacked for sustainable irrigation management were adequate social capital and well-functioning institutions that they could call their own. As a first activity, the PAPRIZ project supported building grassroots infrastructure and helped WUAs restructure, starting with the selection and training of new management cadres. They then helped WUAs review their rules and regulations including those pertaining to leadership rotation. The process for selecting WUAs' leaders became based on clear and transparent criteria comprising leadership skills as well as management experience and capacity. At the same time, leaders were permitted to hold their positions for three- to maximum four- or five-year terms.⁶²

The WUA federation was also restructured in the same manner. It was reorganized into Tsaravoy Federation and the new leadership formulated a clear vision for its services. These services comprised capacity building for its members, including organization of study tours to well-functioning WUAs, assessment of operation and management needs of the facilities, organization of WUAs' labour contribution to maintenance works, user fee collection to finance maintenance works, hiring of contractors for heavy earthworks and preparation of annual work plans and budgets in which all WUAs participated in reviewing and approving. In 2011, Tsaravoy Federation decided that the fee could be collected in-kind and offered farmers the service of collection of paddy directly from their fields at the time of harvest, taking over the responsibility and the cost of storage, transportation and sale at the market. This decision increased the probability of fee payment since the amount of paddy to be given as a fee was relatively small compared to the total harvest.⁶³ At the same time, collecting fees at the end of the cropping season made sure that the financing for maintenance works, generally undertaken during the off-season, was available on time.

Finally, the new management cadre of both WUAs and the federation made sure that their financial transactions were well recorded and accurate and duly audited. The local government, in particular, organized auditing of accounts and record books kept by both the WUAs and their federation, thus formally certifying the financial accountability and transparency of their dealings. In addition, the local government ensured that the statutes, rules and regulations of WUAs and the federation were in compliance with national laws and regulations, and that WUAs' irrigation management was in line with formal agreements.

iii) Designing of rehabilitation works

The PAPRIZ project and the Government of Madagascar offered several technical solutions to the WUAs for the rehabilitation of their scheme. The financial contribution from the PAPRIZ project would cover only a small part of the cost and, therefore, WUAs opted for those that were affordable and manageable in terms of future maintenance needs. These envisaged the use of locally available materials and labour-intensive technologies and, albeit requiring frequent maintenance, they enabled apportionment in small repair works that the WUAs and their federation could manage and finance.⁶⁴ The PAPRIZ project was very supportive of this choice not only because it availed of limited financial resources for the rehabilitation works, but also because past experiences had shown the importance of encouraging sustainable solutions which would count on self-help initiatives and local contribution for the operation and management of the scheme.

62 Before the restructuring, the same management could stay in place for an unlimited number of terms.

63 Generally two 50 kg bags of paddy per 60-100 bags (equivalent to 3-5 tons) are collected.

64 As shown in Table 4.1, the total expenditure for a series of rehabilitation works from JICA through the PAPRIZ project was only MGA 199,632,930, which is equivalent to approximately USD 90,779 at the average exchange rate in 2012 at USD 1 = MGA 2,199.102. Meanwhile, WUAs contributed cash, labour and construction materials.

iv) Implementation of the rehabilitation works

In close collaboration with Tsaravoy Federation, the PAPRIZ project then initiated the first rehabilitation work, the dredging at the headwork, through the recruitment of local contractors in 2010, while the regional government took care of monitoring and oversight. The positive impact of the rehabilitation works inspired WUAs to trust their federation again and more proactively participate in the management of PC-23 and organize successive maintenance works on their own. In particular, specialized government agencies such as DRDR and SRGR assisted the federation with the technical specifications of the works and in cost assessment. However, the federation was able to manage the recruitment, supervision and payment of contractors on its own, using the fees collected from its members. As shown in the Table 4.1, the major rehabilitation works carried out by WUAs include the dredging of more than 13 km of canals, widening of canals, rehabilitation of more than 20 km of rural roads and installation of gates to water intakes. It is also noteworthy that the federation often covered the fuel cost for the heavy-duty machines such as excavators, and that a further significant contribution was made by water users in the form of provision of their manual labour and construction materials.

v) Implementation support and technical backstopping

Throughout the rehabilitation process, the contribution by PAPRIZ staff was basically limited to provision of general implementation support to all implementing partners and technical backstopping to WUAs and their federation, in particular through discrete short-term missions for promoting their self-reliance.

In December 2012, JICA decided to reward farmers' remarkable self-help initiatives and mobilized a short-term expert in irrigation facility management. The expert proposed additional ideas to further improve the irrigation facilities at minimum cost. WUAs put some of these ideas into practice, starting in 2013, using again their own resources. This proved that the model developed by the PAPRIZ project, with minimum input of resources, had been able to engender endogenous processes of sustainable development.

In short, the model can be summarized as a combination of: i) re-structuring of WUAs and the WUA federation with good governance, capacity development and strong leadership; ii) monitoring supports by local public administrations to ensure the enforcement of rules and regulations; iii) ensuring the financial accountability of WUAs and the federation through auditing by local public authorities; iv) provision of counselling and advice to the federation; v) technical backstopping in the designing of practical and sustainable maintenance works through introduction of low-cost technical solutions, and; vi) implementation of the rehabilitation works with supervision and backstopping.

The level of accountability that the restructured federation showed towards its members as well as the tangible results it delivered increased the level of trust and the sense of ownership that the member WUAs felt vis-à-vis the federation itself. The trust and the sense of ownership are the keys for self-reliant and sustainable management of PC-23. As a result of all these experiences, paying the water user's fees to WUA and the federation finally made sense to farmers who were motivated to increase the fees they paid in kind at harvest time.

Table 4.1: History of Maintenance and Rehabilitation Works in PC23 South Irrigation Scheme (2010-2013)

Construction site*	Period	Construction activities	Cost bearer	Contractor	Cost for Construction (Malagasy Ariary)**	Remark
Weir at the upper stream of ①	Sep. 2010 (1 month)	Installation (piling up) of sandbags along Sahabe river	PAPRIZ (Sand bags) Morarano Chrome Commune (Wooden posts)	Members of WUA	12,346,080 (7,000 Sand Bags)	Free labour service by WUA members, Free wooden posts, provision of fuel by WUAs to tractors and power tillers brought by WUA members
Weir at the upper stream of ①	Nov. 2010	Rehabilitation of piled sandbags at Sahabe	PAPRIZ (Sand bags) Morarano Chrome Commune (Wooden posts)	Members of WUA	3,631,200 (5,000 Sand Bags)	Free labour service by WUA members, Free wooden posts, provision of fuel by WUAs to tractors and power tillers brought by WUA members
Weir at the upper stream of ①	Jan. - Feb. 2010	Rehabilitation of piled sandbags at Sahabe	PAPRIZ (Sand bags) Morarano Chrome Commune (Wooden posts)	Members of WUA	5,809,920 (8,000 Sand Bags)	Free labour service by WUA members, Free wooden posts, provision of fuel by WUAs to tractors and power tillers brought by WUA members
①	July-Aug 2011 (10 days)	Dredging of Headwork	PAPRIZ	EGECA	127 648,530	
		Dredging of P5 (350 m)				
		Reinforcement of piled sandbags at Sahabe river				
		Excavation of short-cut canal for diversion at Sahabe River				
② ***	Aug. 2011 (1week)	Rehabilitation of damaged weir at Sahabe River	WUAs	EGECA	33,064,284	Excavators x2 bulldozer x1
		Dredging of P5 (3500 m)				
		Dredging of P5 (3500m), Dredging of C5.5 (7800m)				Free of charge for 1 month (but reduced water users' fees)
		Dredging of C5.6, (1700 m, from diversion to the end of M15)				Operator x 2, Manager x1 Night Guards for heavy duty machinery x2
③	Sep. 2011 (1 month + 23 days)		WUAs	CFAMA + EGACA (CFAMA Excavator +EGECA Operator, Manager)	6,900,000 (Rental of heavy duty machinery) 2,746,000 (Labour Cost) 8,255,270 (Fuel Cost)	
						200 litres went to ②
④	Dec. 2011 Sep. 2012	Installation of a gate for water intake	PAPRIZ	RA FRA	50,197,200	
		Installation of gates for drainages				
		C 5.6.Dredging and widening of secondary canal (3200 m, from the end of M15 to the intake for M19)				Excavators x2
		C 5.5. Dredging and widening of entire canals (7800 m) C 5.6 Widening of canals developed previous years (1700 m)				
	Sep. 2012	Rehabilitation of rural road (approximately 20km, but damaged parts only)	WUAs	Tractor + Trailer of CFAMA and DRDR, WUA members	480,000 (CFAMA Tractor + Trailer) 1,449,000 (WUA members + Operator)	Rural roads along the secondary canal of PC23 south, Maille11 and around 12, there is a plan to implement other sites as well, Free of charge for DHDR tractor + lease of trailer
		Regular maintenance before cropping (weeding canal P5)				100 Ariary/both banks 1 m x 6400 m
		Installation of gate to unofficial water intake				16 sites
		Maintenance of weir at Sahabe dam and repair of P1				
	Sep - Oct. 2012 Sep - Nov. 2013 Sep - Nov 2013 Oct. 2013	Cleaning of drainage and canal,	PAPRIZ WUAs PAPRIZ	RA FRA	30, 000,000 88, 000,000 5, 500,000	
		Installation of gauge and repair of manoeuvring valve				

[Source]: the PAPRIZ project in 2012

*: Please see ANNEX 2 for construction areas. Areas were shown only for those carried out in 2010-2011 season (partially implemented in 2012). Refer to "remark" and "construction activity" in the table for those that do not mention construction site.

**: Average exchange rate for Malagasy Ariary in 2012 was: USD1 = 2199.102.

***: Regarding the construction 4, WUAs negotiated to reduce the construction cost through making biannual dredging contracts with EGECA.

4.2 Impacts⁶⁵

As a direct outcome of the PAPRIZ support, the degradation of PC-23 was halted and its irrigation coverage has already increased from 30% in 2010 to 70% in the 2011-12 cropping season. As a result, average rice productivity (and thus farmers' incomes) increased from 2.2 t/ha (equivalent to about USD 600/ha) in 2010 to 3.5 t/ha (equivalent to about USD 955/ha) in 2012. The following observations were made on the results of the model:

- (i) The federation of WUAs in PC-23 was restructured into the Tsaravoy Federation, and encouraged the return of members who had left WUAs due to the prolonged malfunction of the irrigation scheme. For instance, the water users of tertiary blocks number 19 to 23 (the lowest stream of the irrigation network in PC-23) rejoined the WUAs federation of PC-23 (it is currently Tsaravoy Federation) in 2013, increasing the approximate coverage by an additional 1,000 ha. The organizational functions of the Tsaravoy federation and WUAs were strengthened, and the federation resumed its strong dynamism. All WUAs and their members were reintegrated into the federation within three years after the PAPRIZ project started its support for WUA restructuring.
- (ii) Strong sense of cohesion and belonging nurtured through institutional capacity building led to farmers' spontaneously abiding by the rules and regulations established by WUAs and their federation. This, in turn, discouraged dysfunctional behaviour. For example, farmers on PC-23, who illegally constructed houses on the unused plots, voluntarily demolished their houses, and gave up on-canal farming in favour of rehabilitation of the secondary canals.
- (iii) Contributions by WUA members to the maintenance cost of irrigation facilities resumed and, as shown in Table 4.2, the recovery rate increased dramatically. Specifically, the amount of fees collected per hectare from water users increased from Malagasy Ariary (MGA) 5,000 (approximately USD 2.3) to MGA 60,000 (approximately USD 27) in 2013.⁶⁶ This represents a 12-fold increase in three years. In the 2012-2013 cropping season, WUA members quickly transferred 153 tons of paddy by mid-year, accounting for over 50% of the total water-user fees due to be collected. Before the PAPRIZ project, the collected water-user fees covered less than a tenth of the amount due, as shown in Table 4.2.

Table 4.2: Change in recovery rate for the cost of maintenance

	Before PAPRIZ interventions	2011	2012	2013
Rate of water-users' fee per season	5000 Ariary/producer	100 kg/ha	100 kg/ha	100 kg/ha
Percentage of recovery of maintenance cost	10%	31%	50%	47% (the figure is for the mid-year, and expected to exceed the record of the previous year)

[Source]: the PAPRIZ project

- (iv) With the strengthened organizational capacity and sense of cohesion and belonging, WUA members increased their labour contribution to the rehabilitation works while, for the heavy earthmoving work, Tsaravoy Federation hired private contractors using its own resources. In this way, the federation was able to deliver dredging and widening of canals, the repair of more than 20 km of rural roads and gates to water intakes.
- (v) All the impacts mentioned above resulted in the improved status of the main irrigation facilities such as the headwork and the main canal as well as the lower-stream irrigation and drainage network such as secondary and tertiary canals, thus leading to the gradual resumption of irrigation coverage in PC-23 (from 30% of the whole irrigation scheme before 2010 to 70% in the 2011-12 cropping season).

4.3 Analyses of the Success Factors

This section describes major success factors of the model, and how each factor influenced the improved management of PC-23:

⁶⁵ All information was obtained from the PAPRIZ project by the authors.

⁶⁶ As mentioned earlier, the water-user fee started to be paid in kind in 2011. MGA 60,000 was the price for 100 kg of paddy in 2013.

(1) Change of mindset caused by the prolonged suspension of external assistance

Madagascar has suffered from suspension of new assistance from the international community since the political turmoil in 2009. This unfortunate suspension of new donor support created a situation whereby both the Government and people of Madagascar could not count on outsiders' help in solving any kind of issues in their society. Ironically, this situation forced the Malagasy government as well as farmers to relinquish dependency on outsiders, and eventually made them realize that problems should be (and could be) solved by themselves alone. This change of mindset toward "self-reliance" was a base for the successful experience in PC-23.

(2) Successful restructuring and capacity building of the WUA federation

By assisting WUAs and their federation in re-structuring and strengthening their leadership and organizational capacity, the PAPRIZ project helped build trust among water users and the managerial capacity of WUAs and their federation, which are required for a sustainable management system that relied on self-help.

(3) Enhancement of self-reliance among the water users

The PAPRIZ approach pays particular attention to nurturing the sense of ownership among water users in the management of PC-23, and its supports were carefully provided. All PAPRIZ supports in maintenance of the irrigation facilities were provided in a cost-sharing manner, and the PAPRIZ project limits its support to the minimum external inputs in order to encourage self-help by the water users, while putting a lot of emphasis on restructuring of the federation of WUAs and strengthening the partnership with both central and regional public institutions. The PAPRIZ project has provided a limited degree and frequency of supports, especially after Tsaravoy Federation gained in capacity strength and autonomy in its management. This ownership-enhancing approach under the PAPRIZ project, together with the suspension of external supports for Madagascar, helped establish a self-reliant mindset among water users. As a combined result of enhanced ownership and the trust that Tsaravoy Federation earned from WUAs, successful rehabilitation works conducted because of the PAPRIZ assistance were quickly taken over by Tsaravoy Federation.

(4) Involvement of central and local government authorities

The PAPRIZ project played a catalytic role in involving both central and regional government authorities in improved management of PC-23. The PAPRIZ assistance fostered the creation of a partnership between the water users and public sector entities at various levels of implementation around a common vision that helped clarify roles and responsibilities of each partner.

(5) Low-cost technologies for rehabilitation and maintenance

From the sustainability viewpoint, all technical solutions which the PAPRIZ project helped identify for the rehabilitation works were affordable and manageable by WUAs whose financial capacity was quite limited. The maintenance works of infrastructure such as roads, canals and drains were carried out part by part,⁶⁷ but regularly, and often by the "Highly Intensive Manual Work" (HIMO – Haute Intensité de Main d'oeuvre) method that is affordable for WUAs and their federation. Water users witnessed the positive and significant impact of dredging work carried out together with the PAPRIZ project, and noticed that low-cost maintenance can make significant difference in their irrigation farming in PC-23, and eventually in their household economy (Seeing is believing).

This triggered the willingness of water users to further improve the status of irrigation facilities, and together with the strengthened capacity of WUAs and their federation, as well as the trust they earned from the water users, resulted in the increase in water users' contributions.

These features made WUAs confident to take over the operation and management of PC-23 that no longer seemed beyond their capacities and financial resources.

4.4 Scalability Assessment

Utilizing the Scalability Assessment Framing Questions developed by IFAD in collaboration with the Brookings Institution, the adoptability of the model by other African countries was assessed as shown in Table 4.3.

⁶⁷ Actually, it was impossible to carry out entire rehabilitation with the limited financial resources of water users as well as the PAPRIZ project, given the severe deterioration of infrastructure in PC-23.

Table 4.3: Scalability Assessment

Framing Questions		
Ideas	What is the intervention to be scaled-up?	Self-reliant operation and management of irrigation facilities by the water users
	Whose idea?	The PAPRIZ Project funded by JICA
	Has it been tested/ piloted?	The model was tested, and its effectiveness was proven in PC-23 irrigation scheme in Alaotra-Mangoro Region of Madagascar.
Vision	What could be the appropriate scale of the intervention?	The vision for scaling-up should be determined by the countries adopting the model, based on their policy priority, financial and managerial capacity, and possibility of partnership with technical institutions and development partners.
Drivers	What or who are the drivers for the scaling-up process ahead? (including local leaders or champions, external catalysts and incentives)	<p>Both central and regional governments could be the drivers for scaling-up the model since the sustainable maintenance of irrigation schemes is a critical challenge in irrigation farming in a number of African countries. In the central Government, the Ministry of agriculture can be a main driver, while regional public authorities could play critical roles on the ground.</p> <p>This model requires relatively low financial resources for replication, thus the self-initiative of water users, WUAs, and WUA leaders can also push the scaling-up.</p> <p>Another possible driver (external catalyst) is the development partners with an interest in supporting irrigation farming, as JICA was the strong driver in the experience in PC-23.</p> <p>In the particular case of Madagascar, the reduction of external assistance acted as an external catalyst and encouraged the Government and farmers to adopt solutions that relied on minimal external input and supported self-reliance.</p>
Spaces	Fiscal/Financial	There is sufficient financial space for scaling-up the model, since it requires only minimal external financial and materialistic resources that are affordable for African governments. As the experience in PC-23 shows, the injection of external resources is needed only at the beginning to kick start activities, and WUAs should continue management and maintenance work within their financial capacity. Even though initial funding should primarily come from the state budget, the financial space could be further expanded if development partners are interested in supporting scaling-up of this model.
	Natural Resource/ environmental	While this model leads to efficient water use, its successful adoption can cause the increased use of water and land, thus it might put pressure on water and land resources in localities. To avoid the negative impacts of the replication of the model, the natural resource space should be well examined before adopting the model, and its implementation needs to be carefully monitored.

Framing Questions		
Spaces	Policy	<p>There exists sufficient policy space for the scaling-up of the model in most CARD member countries, since the sustainable management of irrigation schemes is a common critical issue for most government who lack financial capacity to frequently carry out large-scale rehabilitation works.</p> <p>Policy space must be large in countries where the governments put priority in promotion of irrigation farming, with modern irrigation schemes that requires extensive maintenance work. Irrigation schemes should not be too large or too high-tech though, since the model requires maintenance works basically carried out by water users.</p> <p>An important determinant of the policy space for scaling-up the model is the availability of a specific legislative, policy and regulatory framework that is supportive of irrigation management by water users. Without this framework, the model cannot be replicated successfully.</p>
	Political	<p>Investment in irrigation infrastructure and the management and maintenance of irrigation schemes are often political matters. Some political decisions and/or factors can negatively affect the adoption of this model. For instance, the injection of external financial resources to the irrigation schemes for political reasons can nurture dependency among water users. Also, corruption of WUAs and/or local leaders can prevent trust building among water users. The absence of these negative political factors is a prerequisite for the replication of this model.</p>
	Market	<p>The adoption of this model is likely to increase the total production of rice and thus requires market outlets that are able to absorb it, as well as increased storage and transportation capacity. As a result, the model would be best implemented in those areas where there is good access to transport infrastructure and large markets such as highly populated cities.</p>
	Capacity	<p>Water users, WUAs, and their leaders should have sufficient managerial, technical and organizational capacity for the successful adoption of this model. As mentioned earlier, such capacity can be expanded through adequate investments to some extent.</p> <p>Technical capacity of WUAs and water users can be built through knowledge transfer and training programmes. It, however, often requires supports by the public sector, private sector, or development partners.</p> <p>Capacity of public service providers in, for instance, the provision of auditing services and the supervision of the WUAs' operations is also another determinant for this space.</p> <p>The model also requires capable civil work contractors that are available at localities to work with farmers' organizations such as WUAs.</p>
	Cultural	<p>Rice farmers have the strongest incentive to make an irrigation scheme work. However, the effective collective action required by the model implies a sense of trust among farmers and a dominant culture that supports collaboration and community work. Another key factor for success is the sense of ownership of water users in irrigation management.</p> <p>The self-reliant mindset of water users is another determinant of the cultural space, and the scaling-up of the model is likely to be difficult where farmers have too much dependency on external resources and/or services.</p>

Framing Questions		
Spaces	Partnership	<p>There exists sufficient space for partnership for scaling-up this model, particularly with the development partners who have interest in supporting irrigation agriculture.</p> <p>Considering the importance of sustainable irrigation management, partnership space is also stretched among WUAs, both central and regional governments and public service providers.</p> <p>In the countries where the private sector can obtain business opportunities from the replication of the model, the partnership with them could also be explored.</p>
Pathways	What are the pathways for scaling-up in other countries?	<p>Pathways for scaling should be determined by the country adopting the model. However, the success of the model in PC-23 shows that the partnership between public authorities and WUAs and their federation should be established before engaging in the repair of physical infrastructure because it created not only the drivers for implementation but also for exit and sustainability.</p> <p>In addition, as each model needs to be adapted to the local contexts, it is highly recommended that the model be tested in a small part of a large irrigation scheme or for a small irrigation scheme only before being brought to scale.</p>
	What is the time frame for pathways to extend?	
	How do the drivers and spaces define these pathways?	
	Bottlenecks to scaling and risk mitigation.	

4.5 Conclusions

Ensuring sustainability in irrigation management is quite a complex issue, since it calls for financial resources, appropriate institutions, appropriate technology and technical capacity, and socio-cultural conditions for trust building and functional organizations, some of which may be lacking in many African countries. The experience with the PC-23 irrigation scheme management illustrates a potential role model of sustainable irrigation management, providing a few valuable lessons:

- i) Good governance and strong leadership in WUAs and their federation are keys for trust building among water users, and they are prerequisites for sustainable participatory irrigation management by farmers. As the model shows, ensuring these factors should be the first step, and success in replicating the model is unlikely without them.
- ii) External assistance should be limited to a minimal extent so that water users can afford to take over necessary activities for the subsequent operation and management of the irrigation schemes. This will help prevent dependency from developing among water users. Low-cost technical solutions are also useful in this regard.
- iii) Rehabilitation works should be planned and carried out within the financial and managerial capacity of WUAs (starting small, and expanding them gradually). It requires frequent rehabilitation works at a small scale, but they are often low-cost and it assures sustainability.
- iv) Visible impacts of maintenance/rehabilitation inspire water users to proactively participate in irrigation management.
- v) Partnership with central and local public authorities and their appropriate support to water users contribute to the success. However, the injection of external financial and/or material resources can threaten both self-reliance and the creation of the sense of ownership among water users, thus the public sector should refrain from careless interventions with materialistic resources. Favourable public sector assistance can be capacity building, technical support, monitoring, ensuring the compliance to laws and policies, and auditing.
- vi) Partnership with private service providers such as local contractors can contribute to assuring sustainable maintenance of irrigation schemes.

Considering the features of the model such as low-cost intervention and the importance of sustainable irrigation management in Sub-Saharan Africa, it is fair to conclude that the model is highly replicable in other African countries, provided target irrigation schemes do not face negative political issues/factors or too strong a dependency among water users.

CASE 5:

Integration of Rice Value Chain in Côte d'Ivoire – Linking Value Chain Actors

<i>Basic Information of the Model</i>	
Country	The Republic of Côte d'Ivoire
Area of Intervention in value chain	Integration of rice value chain, through strengthening linkages among producers, processors, traders and financial institutions
Mode of Intervention	Project (technical and financial assistance)
Implementer	APRAO Project Manager; Ministry of Agriculture; National Rice Development Office (ONDR) ⁶⁸
Partner Organization(s)/Institution(s)	Food and Agriculture Organization of the United Nations (FAO), the Government of Spain

5.1 General Description of the Model

As in many other countries in Sub-Saharan Africa, agriculture plays a very important role in Côte d'Ivoire. Rice is the first food crop in the country, and thus development of the rice sector influences food security as well as the economic growth of Côte d'Ivoire to a great extent. However, the production and market linkages in the rice sector in Côte d'Ivoire are generally weak, and stakeholders in the sector face a number of constraints in each part of the rice value chain. Comprehensive interventions are, therefore, needed for rice sector development in Côte d'Ivoire: ensuring the supply of quality inputs for production in the upstream of the value chain; improving marketing for ensuring adequate outlets for the produce in downstream of the value chain; and, integration of the whole value chain in order to connect all stakeholders.

The inadequate access to financing is one of the most critical and common challenges for all actors in Ivorian rice sector. Despite several commercial banks and microfinance institutions operating in the country, these financial service providers are generally hesitant to finance the agriculture sector because it is less organized, less profitable and highly uncertain compared with other sectors, and is thus considered a high-risk sector for their investment.

It is against this backdrop that the Government of Côte d'Ivoire launched the Project for Improvement of Rice Production in West Africa (APRAO),⁶⁹ in collaboration with FAO, to pilot interventions across the whole rice value chain in the project areas such as inputs, financing, production, processing and marketing with the emphasis to strengthen the linkages among stakeholders in the value chain. This case study analyses the APRAO project mainly in terms of value chain integration in the rice sector in Gagnoa, which the project realized through establishing and strengthening linkages among stakeholders.

The followings are the APRAO supports which helped the value chain integration:

- (i) The APRAO project provided loan guarantees in order to encourage financial institutions to provide financial services to players in agriculture sector. Under this scheme, a commercial bank provided rice millers with financing for the purchase of paddy rice for processing. This support helped rice millers to fill the financial gap that had prevented them from up-scaling their milling businesses. This project approach (involvement of local financial institutions) leads to sustainable financing to the sector.

⁶⁸ ONDR stands for l'Office National de Développement de la Riziculture.

⁶⁹ The APRAO stands for l'Amélioration de la Production du Riz en Afrique de l'Ouest. The APRAO project in Cote d'Ivoire is implemented in four project sites, namely Bongouanou, Gagnoa, Grand-Lahou and Yamoussoukro. This document analyzes the APRAO experience in Gagnoa that was most successful in value chain integration among APRAO target areas.

- (ii) Increased access to financial services by rice millers strengthened their financial capacity and it led to contracting practices between rice millers and rice producers. The contract designates sale of produced paddy to respective rice millers in return for the farm inputs, which are supplied from rice millers to producers before each cropping season. This contract practice covering the sale of paddy and provision of farm inputs benefits rice millers by enabling collection of a large quantity of paddy for their effective and efficient business operation, as well as benefiting rice producers by enabling them to increase the use of farm inputs which is the key for improving their production and productivity, but had been impossible prior to the APRAO project due to their limited financial capacity and lack of access to financial services.
- (iii) The APRAO project set up a dialogue platform in the project areas where all rice sector stakeholders can exchange relevant information such as rice demand in markets and required quality, discuss the issues each stakeholder faces, and form consensus and agreement among various value chain actors on related agendas such as the price for rice trading in the year.
- (iv) The APRAO project also provided various technical supports to strengthen the capacity of the stakeholders in the rice value chain: business management training and some managerial tools to rice millers, and technical training to farmers.

Figure 5.1 depicts how various stakeholders interact in the rice value chain under the supports from the APRAO project. Also, the key information of the project is summarized in Table 5.1.

Figure 5.1: Diagram of interactions among stakeholders

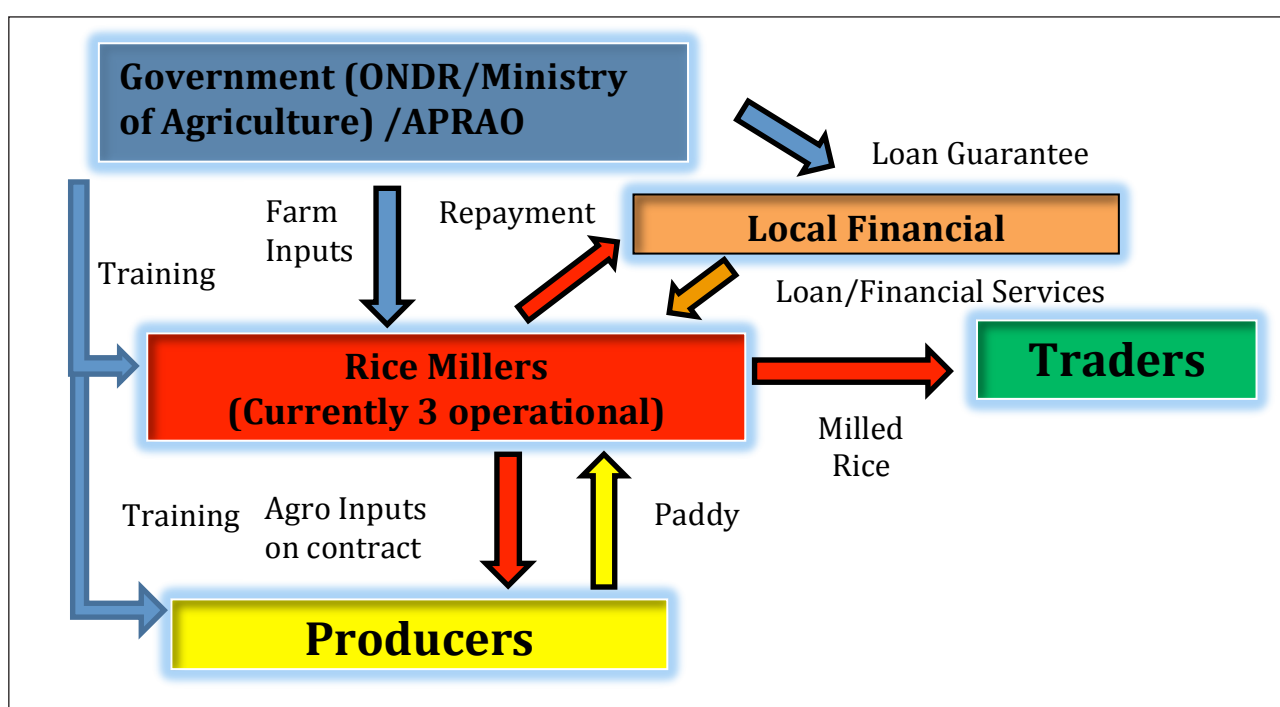


Table 5.1: Summary of the APRAO Project in Côte d'Ivoire

Project Title	Project for Improving Rice Production in West Africa (APRAO) in Côte d'Ivoire
Project Period	2010–2013 (4 years)
Implementer	Ministry of Agriculture, ONDR
Narrative Summary	<p><Purpose of the project> To contribute to increasing sustainable rice production in Côte d'Ivoire.</p> <p><Specific Objective></p> <ol style="list-style-type: none"> 1. Promote and safeguard the production and use of quality seed of improved varieties of rice; 2. Contribute to increasing the production and productivity of rice in the three ecologies in Côte d'Ivoire 3. Promoting the quality of local milled rice for cost effective and profitable marketing. <p><Expected Outcomes ></p> <ol style="list-style-type: none"> 1. At the level of Ministry of Agriculture: <ul style="list-style-type: none"> - Progress of management system for seed production - Quality improvement for seed certification and seed production procedures - Capacity development of management structure of seed producers 2. At the heads of research centres: <ul style="list-style-type: none"> - Improvement in production capacity of pre-basic seed - Development of seed capital - Strengthened technical capacities of teams of researchers in variety identification 3. At the level of agricultural advisory services: <ul style="list-style-type: none"> - The level of mastery of integrated production and pest management and the system of farmers' field schools - Ability of agricultural advisory services to provide adequate services 4. At the level of producers organizations for seeds and paddy rice: <ul style="list-style-type: none"> - Improvement of the level of organizational and management capacity of agriculture producers' associations - Improved technical capacity of seed and paddy production - Sustainable financing to improve production of quality seed and paddy 5. At the level of processors, rice traders and other partner organizations in the rice value chain: <ul style="list-style-type: none"> - Improvement in technical capacity for processing, storage and marketing - The points of collaboration and synergy between the various actors in the value chain are identified <p><Project Budget> USD 5.8 million for five countries (breakdown is unknown)</p>

[Source]: ANADER, 2013: *Rapport de travail annuel exercice 2012* (Annual exercise report 2012)

5.2 Impacts

The assessment of the APRAO project⁷⁰ concludes that the strategies taken in the project helped in facilitating smallholder farmers' access to inputs and markets, while also promoting the rice milling and rice trading business in the project areas. According to the project assessment mentioned above and interviews conducted with the APRAO staff,⁷¹ the APRAO project has made the following achievements in Gagnoa since its launching:

- 631 target rice farmers, which were sampled in the assessment, recorded 14-40% increase in their rice production. Some farmers have managed to increase their productivity significantly from 2.5 t/ha in paddy rice to approximately 4 t/ha, which also increased household revenue.
- Paddy rice production in the target area increased from the baseline (estimated aggregate amount) of 600-700 tons in 2010 to an aggregate of 1,225 tons and 1,479 tons in 2012 and 2013, respectively, as a result of increased use of farm inputs as well as technical supports provided by the project.
- A revolving fund has been set up for the purchase of inputs and this revolving fund helped rice producers purchase aggregate of approximately 15 tons of certified seeds in 2013, 21.8 tons of NPK and of 9.02 tons of urea as well as the purchase of 282 litres of post-emergence herbicides and of 100 litres of systemic insecticide. Before the APRAO project, the consumption of these inputs was negligible in the area.
- In 2013, 437 ha of land had been tilled, representing an increase of 47% compared to 2012. This expansion of cultivated area was mainly driven by the increase in farm household income due to the improved productivity as a result of the increased use of farm inputs and extension of the areas covered by the project.
- Increased access to financial services benefitted three rice milling plant operators who are members of the Gagnoa rice value chain platform. Financing enabled them to consistently procure increased amounts of paddy for rice processing. The quantity of marketed milled rice increased from 87.6 tons in 2012 to 193.8 tons at the end of the first half-year of 2013. With a stabilized sales price of milled rice at CFA Franc 350/kg, the general turnover of the project area was estimated at approximately CFA Franc 67.8 million.
- The revenues of rice producers in Gagnoa also increased due to the consensual trading price of rice, which is higher than the open farm gate price. The farm gate price of paddy rice was set at CFA Franc 175/kg by members of the stakeholder platform, while that in the open market is at CFA Franc 150/kg. This consensual price of paddy rice remained stable throughout the first half-year period of 2013.
- Consumers enjoy a stable price for the locally grown rice. In fact, the consumer price for rice in the Gagnoa market during the first half-year period of 2013 has remained at the consensual price of CFA Franc 350/kg, while the rice price during the same period of previous years fluctuated to a great degree, having reached as much as CFA Franc 450/kg at the high end.
- Harvesting, post-harvest and processing operations were improved in terms of rice quality control as a result of the technical supports by the APRAO project as well as sharing information among producers, rice millers and traders in the stakeholder dialogue platform regarding the rice quality demanded in markets.
- Actors in the rice value chain were linked with the local commercial bank for the financing of the paddy rice commercialisation activities in a sustainable manner through loan guarantee schemes.

70 Source: *The APRAO 2013 First Half-year Report*, available at <http://www.fao.org/ag/aprao/projet-aprao/etats-davancement/cote-divoire/fr/>

71 The author interviewed the APRAO project staff and the government officials on the achievement of the APRAO project as of November, 2013

5.3 Analysis of the Success Factors

The following factors contributed to the success of the APRAO project:

(1) The forum for better communication among the value chain stakeholders

The APRAO project provided a forum where all stakeholders in the rice value chain can openly share information and views, thus each stakeholder could better understand the needs, demand and constraints of other stakeholders. The key for value chain integration is to deepen understanding of stakeholders about the value chain in which they are operating, and it calls for better communication among relevant stakeholders. The APRAO project provided the value chain actors with communication and learning opportunities by setting up the stakeholder platform through which the gaps in the rice value chain were clarified, giving indications to value chain actors on how to fill these gaps.

(2) Comprehensive supports along the whole rice value chain

The APRAO project in Gagnoa made a set of interventions in various segments of the rice value chain to comprehensively address issues and constraints in production, processing, marketing, financing and pricing which is necessary for successful rice production and marketing. This made the rice value chain function all the way from one end to the other.

(3) Full involvement of local private sector

In the APRAO project, interventions were made with full utilization of locally operating private sectors such as commercial banks and rice millers, rather than the project taking over their business functions. The emphasis was put on enhancing the economic activities of stakeholders in the value chain, and this project approach prevented the distortion of input, output and financial markets, thus helping realize healthy growth of the market-oriented economy in the project areas. Utilization of local service providers also secured their business opportunities and contributes to sustainability of rice business in the areas. Involvement of the private sector and linking it with other stakeholders were made possible by the introduction of contracting practices which give confidence to all parties with clear terms and conditions for each stakeholder (e.g. contracts for supply of paddy from farmers to millers, in return for the advance supply of farm inputs from millers to farmers, price, timing of delivery).

(4) Geographical focus

The APRAO project was implemented in a few limited geographical locations. That geographical focus made it easier to identify individual key actors operating in the rice value chain and link them with other stakeholders, since the number of actors was limited and their linkages are more visible compared with the national-level, rice value chain. The value chain integration could have been more difficult without geographical focus. The implementation of the project with geographical focus also helped address challenges that are specific to the localities.

(5) Right selection of project sites

Gagnoa, one of the APRAO project sites, has good access to decent transport infrastructure and thus some major markets in Côte d'Ivoire such as Abidjan and Yamoussoukro. Also the project area has high rice production potential. These factors are prerequisites for successful commercial agriculture, and Gagnoa was the right place for intensive rice farming. The selection of correct project sites contributed to the success of the APRAO project.

5.4 Scalability Assessment

Based on the *Scaling-Up Framing Questions* developed by IFAD in collaboration with the Brookings Institution, the scalability of the model was assessed as summarized in Table 5.2.

Table 5.2: Scalability Assessment

Framing Questions		
Ideas	What is the intervention to be scaled-up?	Value Chain Integration through linking stakeholders in the rice value chain
	Whose idea?	The APRAO project (experience from Côte d'Ivoire)
	Has it been tested/ piloted?	The pilot was implemented in Gagnoa with satisfactory results
Vision	What could be the appropriate scale of the intervention?	The appropriate size of scaling the model needs to be determined by the countries adopting it, based on their political vision, priorities, market conditions and other factors. However, the interventions have to be focused in limited geographical areas for easier linkage building among all key actors in the value chain, and for comprehensively addressing issues specific to its localities. Also the scaling-up of the model should be considered in those areas where high market and production potential exists.
Drivers	What or who are the drivers for the scaling-up process ahead? (including local leaders or champions, external catalysts and incentives)	<p>Policy/Government – The government and policies can be strong drivers for scaling-up this model, if they are supportive to market-oriented rice farming.</p> <p>External catalytic factors – International initiatives specifically related to agriculture and food security on rice such as CARD can be a driver for disseminating this model.</p> <p>Increasing demand for rice in Africa can also be a driver for replicating the model in other countries.</p> <p>Development Partners – Development partners with strong interest in promoting commercial rice farming would be strong drivers.</p>
Spaces	Fiscal/Financial	It might be difficult for some African governments to replicate this model on their own, due to their limited financial capacity. However, the financial space could be relatively easily created in partnership with development partners, since financial resources required for the model ought not to be extremely large due to the following reasons: i) the model should target the rice value chain in limited geographical areas, and ii) financing to value chain stakeholders can be done in partnership with private financial service providers such as local banks.
	Market	Access to decent transport and market infrastructure is a prerequisite for replication of the model. Existence of market outlets for rice and the existence of private actors in operation such as millers, financial institutions and traders are other prerequisite conditions for scaling-up of the model.
	Policy	<p>Policy space for scaling this model exists in all the CARD member countries since they all aim to achieve rice self-sufficiency through import substitution by commercialization and intensification of rice production.</p> <p>Supportive policies would, however, be necessary to promote the access to agricultural inputs and financing services.</p> <p>Policies for private sector-led or market-oriented rice sector development and priority on rice are other prerequisites which determine the space for replication of the model in the policy dimension.</p>

Framing Questions		
Spaces	Capacity	<p>As far as the rice production is concerned, this model requires only basic technical expertise that already exists in most African countries, thus there is a sufficient capacity space for scaling-up the model in all CARD countries.</p> <p>However, the model also calls for value chain stakeholders to have local capacity in marketing and facilitation to strengthen their linkages, something that some African countries may lack. Nonetheless, this space can be created through outsourcing to international experts at least in the short term.</p>
	Cultural	The culture to conform to the contract agreements, compliance with laws, and/or existence of law enforcement measures is a prerequisite for replicating the contract farming promoted in the model.
	Partnership	<p>The transformation of an agriculture sector from subsistence to a market-oriented one is the mainstream trend for agriculture development supports by a number of development partners. Therefore, there is sufficient partnership space with them for replicating this model in other countries.</p> <p>Partnership with local financial institutions is the key for success, and therefore the model can be adopted only in places where operational local financing service providers exist and they can receive sufficient benefit from their investment in rice-related business. However, the partnership with local financial institutions calls for risk mitigating measures such as credit guarantee and/or risk sharing, since agriculture is regarded as an uncertain and risky business. In this regard, the strong interest of development partners in commercial agriculture can lead to financial supports to provide risk-mitigating measures for financing service providers.</p>
Pathways	What are the pathways for scaling-up in other countries?	The pathways for scaling-up the model should be determined by the countries interested in replication. The establishment of the dialogue platform (or strengthening if similar platforms already exist), however, should be the first activity.
	What is the time frame for pathways to extend?	The negotiation and consensus formation with local financial institutions on financial service provision should be made, while other supports such as technical supports and capacity building in business management and rice production are provided to rice millers and rice producers respectively.
	How do the drivers and spaces define these pathways?	The time frame for scaling depends on the size of target areas where the model is adopted, the capacity of value chain actors, as well as the government commitment, available resources and supports from development partners.
	Bottlenecks for scaling and risk mitigation.	

5.5 Conclusions

The value chain integration under the APRAO project gave significant impacts, and other Sub-Saharan African countries could also benefit from the adoption of the model. Especially, the approaches taken for enhancing communication among value chain actors through setting up the dialogue platform and for involvement of financial institutions through provision of risk management instruments (loan guarantees for risk sharing) were proved effective, and are widely applicable to any commodity value chains.

Even though detailed pathways for replication should be elaborated based on specific contexts of countries to adopt the model, the general scalability assessment shown in the previous section provides some implications in terms of prerequisites for successful replication of the model. The prerequisite conditions include: i) government commitment and supportive policies to promote the market-oriented rice farming; ii) priority on domestic rice production and marketing; iii) financial and technical supports in value chain integration by development partners (only if governments cannot afford), and iv) the existence of the culture to conform to the contract agreements or law enforcement measures.

Further, this model can be successfully scaled-up in areas with high agricultural potential, better access to infrastructure, better access to markets, and a number of operating private sector players such as rice millers, traders and local financial institutions which all contribute to prevalence of commercial rice farming.

CASE 6:

Promotion of Retail Service Development for Agro-Inputs in Rwanda

<i>Basic Information of the Model</i>	
Country	The Republic of Rwanda
Area of Intervention in value chain	Promotion of agro-input supply network through financial risk mitigation and technical supports to private agro-dealers
Mode of Intervention	Project
Implementer	International Fertilizer Development Center (IFDC)
Partner Organization(s)/Institution(s)	Ministry of Agriculture and Animal Resources (MINAGRI), Rwanda Fertilizer Association (RFA), agro-dealers, Soil Health Programme of Alliance for a Green Revolution in Africa (AGRA)

6.1 General Description of the Model

(1) Background

The 'Green Revolution' in Asia was made possible by the adoption of modern farm inputs such as fertilizers, pesticides and improved seed varieties. With these inputs, farmers were able to substantially increase their productivity and production. The current productivity of rice in Sub-Saharan African countries is generally far below its potential, and this 'yield gap' is mainly attributed to the low use of inputs. Ordinary African farmers cannot afford sufficient amounts of farm inputs, and they also have limited access to quality inputs. Inadequate use of modern inputs results in low productivity, low production and low income and this prevents them from purchasing necessary farm inputs, resulting in a vicious circle of poverty repeating itself.

In order for African farmers to break free from this vicious circle, it is important to improve their access to affordable quality farm inputs, and for this reason, the Government of Rwanda started the Crop Intensification Programme (CIP). As the government flagship programme, CIP distributes fertilizers, pesticides and improved seeds to farmers at subsidized rates through designated service providers.⁷² In general, the subsidy programme has the effect of increasing farmers' purchasing power, and thus expanding markets for farm inputs. CIP functions in the same manner, and helped in promoting farmers' use of fertilizers and other productivity enhancing inputs in Rwanda.

Rwandese farmers have a strong and deep-rooted cooperative culture established especially in the marshlands cultivated with rice. This culture has created a long history of collective purchase of inputs usually taking place when external resources are mobilized through temporary supports, and cooperatives in these cases are used as input distribution channels. In addition to depriving cooperatives of every incentive to organize bulk purchase with members' own resources, such ad hoc collective purchase and distribution of inputs have distorted input supply markets and deprived private agro-dealers of their business opportunities. The collective purchase and distribution of inputs by cooperatives thus prevented the development of a vibrant private-based input supply network in rural areas, together with insufficient financial capacity of agro-dealers due to no/limited access to financial services. As a result, rice farmers become completely dependent on cooperatives for accessing fertilizers, and the absence of agro-dealers in rice production areas severely impedes the availability of farm inputs in some marshland areas.

Since the whole country is not covered by cooperatives and the government supports and donor-funded programmes and projects are often time-bound and ad hoc, Rwandan farmers in many areas are left without access to any suppliers even when they have the means to purchase the farm inputs they need. This service

⁷² Service providers are entities (they can be NGO, entrepreneurs, agro-dealers, and civil societies) who are chosen for distribution of services through a bidding process

gap in the input supply chain significantly contributes to the low input use by rice farmers, and thus the low productivity and low income at farm households in Rwanda.⁷³

(2) Supports for agro-input retailers as a successful model

While CIP expanded the demand for inputs, the lack of input suppliers was an issue in rural areas. This challenge needed to be addressed with specific support aiming at promoting the participation of private entrepreneurs in the agro-dealing business. In particular, agro-dealers needed assistance in expanding their managerial and technical capacities as well as in accessing financial services.

Against this backdrop, the International Fertilizer Development Center (IFDC), in association with CIP, started the implementation of three projects: Catalyze Accelerated Agricultural Intensification for Social and Environmental Stability (CATALIST), Privatization of Rwanda's Fertilizer Import and Distribution System (PReFER) and Rwanda Agro-Dealer Development (RADD) project. The latter, in particular, is the object of analysis in this case study.

Funded by the Soil Health Programme of the Alliance for Green Revolution in Africa (AGRA), the RADD project has facilitated the development of the fertilizer supply chain by supporting private investments in agro-input sales network. The project identified potential rural entrepreneurs who were interested in establishing agro-dealer outlets, and yet had good financial- and business capacity or good rapport with farmers. The RADD project provided training to these potential agro-dealers on various aspects of fertilizer procurement/sourcing and sale. Since agro-dealers generally require improved financial literacy, the project also trained them in financial- and business management. With the supports by the RADD project, the agro-dealers also established demonstration plots showing farmers the impact of fertilizer and other products they sell.

Even though most entrepreneurs in Africa need initial capital for setting up agro-dealing businesses, their financial sources are limited to bank loans. Nonetheless, often entrepreneurs cannot easily access bank loans, since banks are too cautious in dealing in rural and especially agriculture-related business due to its high uncertainty. To address this challenge, the RADD project offers a risk-sharing fund for loan seekers. The fund is provided after assessing their business qualifications and other bank requirements such as business plans and loan applications, in coordination with local financial institutions.⁷⁴ This reduced the risk for financial institutions, thus encouraging the provision of financial services to agro-dealers. Since this risk-sharing fund is a grant as initial capital given to entrepreneurs, agro dealers do not need to repay it, and are therefore able to reinvest the sales turnover into procurement and meet the operational costs when setting up the agro-dealing outlets (shops).

In addition to the loan guarantee, the RADD project supported entrepreneurs through capacity building and technical backstopping for accessing financial services, including assistance in preparing good business plans to submit to banks when applying for a loan. Furthermore, the project worked also with Equity Bank and other financial institutions to help interested entrepreneurs obtain information on available financial services.

Finally, the RADD project interventions also covered the upper stream of the input supply chain. The project analyzed the legislation, institutions, and practices related to fertilizer import, and made some suggestions and policy advocacy to improve the fertilizer sector to be more efficient, effective and private sector-driven. Along this line, the Rwanda Fertilizer Association (RFA) was provided with the RADD supports to strengthening its institutional capacity. With the combination of all the supports mentioned above, the RADD project tries to support the development of the whole fertilizer supply chain in Rwanda, as summarized in Table 6.1. This case study will, however, put its analytical focus on the project supports to agro-dealing (retailing).

⁷³ Kelly et al, 2001, *Fertilizer consumption in Rwanda: Past Trends, Future Potential, and Determinants*, Paper prepared for the Policy Workshop on Fertilizer Use and Marketing, organized by MINAGRI and USAID, Rwanda, 22-23 February 2001

⁷⁴ The half of the required capital (maximum) will be provided as grant by the RADD project, and the rest is provided by commercial banks as an ordinary loan.

Table 6.1: Overview of Rwanda Agro-Dealer Development (RADD) Project

Project Title	Rwanda Agro-Dealer Development (RADD) project
Project Period	January 2010 – May 2013
Implementer	International Fertilizer Development Center (IFDC)
Narrative summary	<p><Purpose> To address supply-side agro-input issues by building the capacity of Rwanda's agro-dealers</p> <p><Expected Outputs> Output 1: Generation of interest in agriculture sector development by supporting private investments in agro-input import and distribution Output 2: Development of agro-dealer network in conjunction with the expansion of the Rwanda Fertilizer Association (RFA) Output 3: Advocacy on enabling environment for privatization of Rwanda's fertilizer import and distribution system</p> <p><Inputs> Input 1: Technical support and demonstration Input 2: Training for agro-dealers on business management Input 3: Information technology (IT) decision support Budget: USD 2.7 million</p> <p><Activities> 1) Provides capital to set up agro-input shops to rural entrepreneurs who have shown financial and social credibility in rice production areas 2) Conducts on-farm demonstration plots showing the effects of fertilizers in farmers' fields 3) Organizes Agro-Finance fair where farmers, input suppliers and bankers meet and discuss finance for inputs</p>

[Source]: RADD project documents and Annual Report (2011), IFDC Rwanda

6.2 Impacts

As of 2012, the RADD project has trained a total of 490 potential agro-dealers⁷⁵ in logistics, inventory and finance of the input supply chain, and more than half of them actually started an agro-dealing business as a result. The higher availability of rural agro-dealer shops in production areas, shortened the distances that farmers had to travel to purchase agro-inputs. According to an estimate from IFDC, these agro-dealers serve now approximately 800,000 farmers and had supplied 39,935 metric tons of fertilizers in 2011 alone.⁷⁶ Thanks to the training received, some agro-dealers reduced economic losses caused by the degradation of inputs stemming from poor storage by 90%, increased sales by an average of 200% for fertilizers, 135% for seeds and 85% for pesticides within the three months after receiving the training.⁷⁷

In addition, trained agro-dealers increased their knowledge about the products they sell, storage techniques and agro-input marketing. Prior to training, most agro-dealers had limited knowledge about the products they were selling or their proper use, which had a significant influence on the amount of agro-inputs sold as well as their effectiveness.

Finally, the 377 demonstration plots were established, often adjacent to the agro-dealing shop, with the RADD supports and served as effective means to train farmers, and to create awareness about the importance of inputs. It is estimated that 60,000 farmers holding over 42,000 ha have benefited from these demonstrations.

Survey results confirmed (Figure 6.1) that the use of agricultural inputs in rural areas increased dramatically in the RADD project areas. For instance, average fertilizer use nearly doubled by increasing from 18% to 33.3%, while it

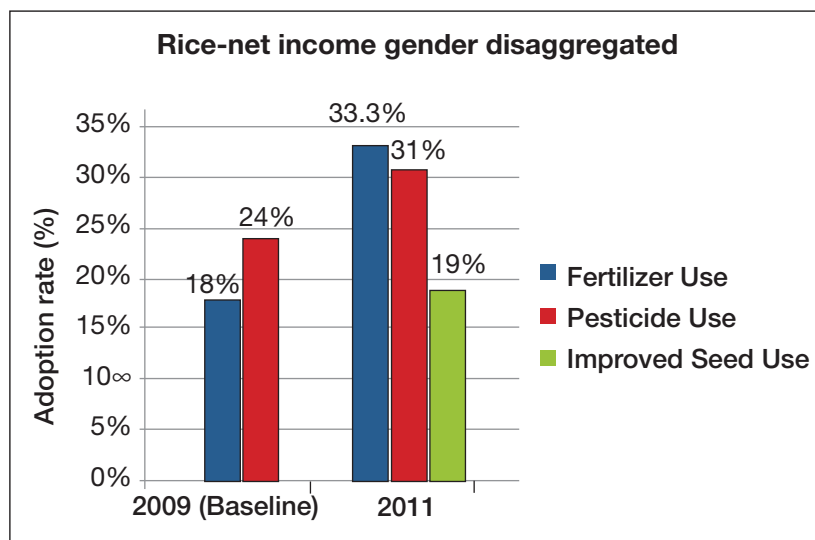
⁷⁵ IFDC, 2012, Catalyze Accelerated Agricultural Intensification for Social and Environmental Stability (CATALIST), the project pamphlet

⁷⁶ IFDC, 2012, *Annual Report: One Million Rwandans Out of Poverty*, Volume 37, No. 2

⁷⁷ *Ibid*

reached 54% in some rice production sites in the Southern provinces. The use of pesticides also increased from 24% to nearly 31% of farming households. The use of improved seeds was not measured before the project. However, nearly 19 percent of households now use them. Each of these improvements has contributed to increased crop productivity.

Figure 6.1: Survey on impacts of capacity building of agro-dealers on use of inputs



[Source]: IFDC, 2012 Annual Report: One Million Rwandans Out of Poverty

6.3 Analysis of the Success Factors

The followings are the factors that made RADD project successful:

(1) Synergies with the government policy and on-going programmes

The Ministry of Agriculture and Animal Resources (MINAGRI) implements CIP with the strong intention to promote the use of farm inputs. The fertilizer voucher programme (under CIP) implemented by IFDC, for instance, increased purchasing power of farmers and thus the demand for farm inputs as well as business opportunities for agro-dealers. The RADD project was hence able to give its impact in a complementary manner to the government flagship programme in its agro-input market development efforts. In collaboration with the USAID-funded PReFER project, IFDC was able to facilitate the privatization of fertilizer procurement (away from the cooperatives' monopoly) and the distribution of fertilizers through the agro-dealer networks developed by the CATALIST project under the 'smart input subsidy' programme. As a result, the RADD project was able to build on other programmes' achievements and work in a complementary, synergistic manner.

(2) Linking stakeholders

Focusing on the development of the agro-dealer network, the RADD project worked in collaboration with the RFA, which was considered as the future institutional foundation of the input supply network. RFA is comprised of both public and private entities engaged in importation, procurement, storage, logistics, transportation research and extension as well as development partners who are interested in supporting the fertilizer sector. The RADD project involved RFA in all of its training programmes and workshops, including dialogues with private banks, government and development partners. As a result, the RADD project contributed to strengthening linkages among stakeholders as well as nurturing public-private partnerships in the input supply chain through enhancing the functions of RFA.

(3) Increased access to financial services through partnership with financial institutions

The RADD project expanded rural entrepreneurs' access to financial services through a guarantee fund established within local financial institutions. This risk-sharing measure covered maximum half the financial needs of entrepreneurs thus leaving local financial institutions exposed for only half of the total investment. This approach encouraged private banks to invest in agro-input business and logistics such as importation, procurement and transportation. As a result, financial institutions invested more in the agriculture sector, and it enabled expanding business opportunities for financial institutions in rural areas, and sustained access to financial services for agro-input businesses as well as a healthy economic growth at localities.

(4) Capacity building by experts

The RADD project provided agro-dealers with training in various areas ranging from business management (e.g. banking, book keeping, procurement/sourcing, retailing) to agronomy (e.g. characteristics of farm inputs sold, management of demonstration plots). The training programmes were carried out by experts with good knowledge and experience in their respective areas of expertise. Also, the RADD project provided RFA members with comprehensive IT training in order for them to be able to manage collective procurement, online orders, mobile communication modes, and inventorying and decision-making support tools. As the RADD project followed a training-of-trainers (ToT) approach to develop its training programme for RFA, now the RFA is able to provide training through its own resources to other input supply operators.

(5) Promotion of farm inputs through demonstration plots

Demonstration plots managed by agro-dealers helped promote the use of farm inputs by farmers and revealed precious contributions to the establishment of successful agro-dealing businesses. The demonstration plots are geo-referenced using a global positioning satellite (GPS) system, to monitor their soil characteristics over the whole period of demonstration. This contributes to the identification of the best fertilizer composition for each location, and generated a set of data including crop yields, fertilizer volumes sold and soil characteristics which will help realize appropriate sets of farm inputs handled by agro-dealers and develop better farming practices.

6.4 Scalability Assessment

As shown in the previous section, the RADD project gave significant impacts in improving the sales and use of farm inputs in Rwanda. The applicability of the model to other countries is assessed as shown in Table 6.2, utilizing the scalability assessment framework developed by IFAD, in collaboration with the Brookings Institution:

Table 6.2: Scalability Assessment

Framing Questions		
Ideas	What is the intervention to be scaled-up?	Start-up assistance for potential rural agro-dealers
	Whose idea?	International Fertilizer Development Center (IFDC)
	Has it been tested/piloted?	It was tested with significant results in Rwanda
Vision	What could be the appropriate scale of the intervention?	Appropriate scale is determined by the physical accessibility of rice producing areas, the political vision of the government and its commitment to a private sector-driven input supply chain, priority given to promoting the use of farm inputs, availability of rural entrepreneurs and financial institutions and their willingness to enter the agro-inputs business, and financial capacity of governments and farm households, among other factors.
Drivers	What or who are the drivers for the scaling-up process ahead? (including local leaders or champions, external catalysts and incentives)	<p>Government – Low agriculture productivity is a common problem in African countries, and governments are generally aware of the importance of increasing the use of farm inputs through improved access. The government can be, therefore, a strong driver for replicating this model in other countries.</p> <p>Demand for rice – Increased rice demand in African markets extends pressure to increase rice production and rice demand can be a driving force for scaling-up this model. Most African farmers can do nothing but increase their productivity to meet the increasing rice demand, given limited land resources and significant cost involved in farm land expansion. Improving productivity calls for increased use of farm inputs, at least in the short run. This is especially true for commercialized rice farming areas, as market-oriented farming requires higher input use than does subsistence farming.</p> <p>Private sector – Increased use of farm inputs can expand business opportunities for agro-dealers as well as banks that financially support agro-dealers. Thus they can also act as drivers for scaling-up this model.</p> <p>Champions/External Catalysts – IFDC, AGRA, USAID, other development partners and financial institutions that support private sector-led agriculture development, especially through increased use of modern farm inputs, can be strong drivers.</p> <p>Incentives – Public input distribution and subsidy programmes can enhance use of farm inputs, and work as driving forces for scaling-up this model as long as they are implemented with full utilization of private agro-dealers (These programmes impede the scaling-up of the model, if they are implemented solely by the public sector, because they would deprive the private sector of business opportunities).</p>
Spaces	Fiscal/Financial	Since this model fully utilizes the financial resources of private banks, the required financial space for the public sector cannot be extremely large. Therefore, as long as local banks are willing to invest in agro-input dealerships, financial space for adopting this model could be sufficient for most African countries, or be relatively easily created in partnership with interested development partners.

Framing Questions		
Spaces	Natural Resource/ environmental	The model requires appropriate environmental impact management capacity. For sustainability of input use, therefore, appropriate recommendation for farm inputs application should be made considering not only the soil conditions but also the possible environmental impacts of increased fertilizer use in countries adopting the model.
	Policy	<p>There exists policy space for scaling-up this model in most CARD countries, not only because improved productivity is one of the first priority strategies for rice development in Africa, but also because important roles played by private stakeholders in the rice value chain development have been increasingly recognized.</p> <p>It is also important to note that policies on interest rates, import tariff, regulation of standards and certifications, and transparent pricing mechanisms for both input and rice trading need to be conducive to increasing domestic rice production (These are prerequisite conditions to determine policy space).</p>
	Capacity	Adequate institutional and human capacities in technical and managerial areas on the part of both the government and private agro-dealers are necessary conditions for the replication of the model. However, even when the government and agro-dealers lack these capacities, this capacity space can be relatively easily created by supports from development partners.
	Market	<p>In order to replicate this model, a decent size of demand for farm inputs as well as rice is necessary. As Rwanda's experience shows, this market space for farm inputs can be created through various efforts (e.g. subsidy programmes on farm inputs), which can increase purchasing power of farmers, thus expanding the market demand for farm inputs.</p> <p>Availability of transport and storage infrastructure is another prerequisite condition for the replication of this model.</p>
	Political	<p>Political commitment to private-sector-led agriculture development as well as investments in commercial agriculture is a necessary condition for replicating the model.</p> <p>Usually, the political space for adopting this model is larger in countries where input subsidy programmes are implemented.</p>
	Cultural	Commercial farmers tend to invest more in farm inputs than subsistence farmers. Therefore, replication of this model is more feasible in areas where market-oriented farming prevails.
	Partnership	<p>There is a space for partnership with IRRI, Africa Rice, IFDC, AGRA, Africa Fertilizer Agribusiness Partnership (AFAP), Tropical Soil Biology and Fertility (CIAT), international financial institutions and other development partners who support increased use of modern farm inputs and/or private-sector-led agriculture development.</p> <p>The partnership space with local financial service providers is determined by the profitability of agro-dealing business. A conducive business environment is the important determinant of the partnership space with local financial institutions.</p>

Framing Questions		
Pathways	What are the pathways for scaling-up in other countries?	Establishment of a loan guarantee facility within local banks → Training on business and operational management for rural entrepreneurs → Supporting applications for financing → Technical support in setting up demonstration plots → Increased fertilizer demand → Increased productivity
	What is the time frame for pathways to extend?	Depending on the spaces available in the targeted countries
	How do the drivers and spaces define these pathways?	IFDC demonstrated the feasibility of the path through the RADD project in Rwanda. The detailed pathway for specific country, however, should be defined in the contexts in respective countries
	Bottlenecks for scaling and risk mitigation.	Potential bottlenecks could include unavailability of appropriate fertilizer recommendations, volatility in prices of fertilizers/ agrochemicals, inconsistent policies (relating to subsidies and tariffs), quality inspection and regulations, lack of infrastructure such as feeder roads and storage capacities.

6.5 Conclusions

The experience in Rwanda shows that the model could improve the adoption of productivity enhancing farm inputs, through the development of an outlet network for farm inputs. Involvement of public and private banks in financing, and linking stakeholders operating in the respective localities, are the keys for success.

Since increasing the use of modern farm inputs and thus rice productivity is one of the top priority strategies in all CARD member countries, there is significant demand for adopting this model.

Replication of this model in other countries, nonetheless, calls for the following preconditions:

- i) Political commitment to support private-sector-led agriculture
The commitment of governments to increasing rice production and full utilization of the private sector in agriculture development is the prerequisite condition in the political dimension. For instance, procedures for local production and procurement and supply of inputs need to be liberalized so that the private sector can actively participate in farm input supply business (in other words, replication of this model is impossible under the centralized input procurement and supply systems). Also, supportive programmes such as farm input subsidies and/or provision of credit to farmers in order to promote use of farm inputs can accelerate the scaling-up process, as long as they are carried out with full private sector participation.
- ii) A set of appropriate policies to support market-oriented domestic rice production.
Farmers tend to invest more in farm inputs for commercial crops than for self-consumed crop. Therefore, in order to replicate this model, an appropriate set of policies should be in place to establish a business environment conducive to promoting commercial agriculture. For instance, interest rates for both sellers and buyers of inputs should be reasonable so that producers can invest more in production, while agro-dealers can expand their business according to the market demand for inputs. Trading policy such as rice import and taxation should also be consistent with government efforts for the promotion of domestic rice production.
- iii) Basic market and transport infrastructure
Rural infrastructure such as feeder roads and storages are necessary to enable agro-dealers and farmers to physically access logistical services, thus are prerequisite conditions for replication of this model.

As shown in the scalability assessment above, capacity and financial spaces can be created with supports from development partners, technical institutions and international financial institutions. Thus the adoption of this model is quite feasible even in countries whose governments have insufficient financial and technical capacities.

Increased use of modern farm inputs will definitely help CARD member countries achieve the goals set in their NRDS, and thus replication of this model is worth considering for all CARD member countries. Nonetheless, in doing so, more detailed scalability assessment should be conducted in the specific contexts in countries interested in adoption of the model.

CASE 7:

Protection of Land Ownership and Secondary Land Rights in Madagascar

Basic Information of the Model	
Country	The Republic of Madagascar
Area of Intervention in value chain	Protection of land ownership and land-use rights (Secondary land rights)
Mode of Intervention	Policy and project
Implementer	Project Management Unit within the Ministry of Agriculture, Livestock and Fisheries responsible for the Project to Support Development in the Menabe and Melaky Regions (AD2M)
Partner Organization(s)/Institution(s)	Ministry of Agriculture, Livestock and Fisheries, Ministry of Territorial Management, International Fund for Agricultural Development (IFAD), National Land Programme (PNF)

7.1 General Background

(1) Land management practices in Madagascar

In Madagascar, the average landholding size is approximately 1.3 ha,⁷⁸ ranging from 0.5 ha for the poorest households to 1.8 ha for the wealthiest.⁷⁹ These figures on access to land show the reality that Malagasy subsistence farmers face. This reality is shaped by the coexistence of a formal land tenure system governed by national laws with a customary one, governed by community-based rules.⁸⁰ In most rural areas in Madagascar, nonetheless, the ownership of land is defined and recognized most commonly on the basis of community agreement and lineage-base inheritance,⁸¹ and it is rare that the legal and formal procedures are applied to the acquisition process of land ownership.⁸² Traditionally, on the death of a landowner, his or her children are recognized as legitimate heirs by the patriarchs or traditional leaders before inheriting the land. In this traditional practice, the land ownership is often transferred in front of a crowd of witnesses (especially in areas with low literacy rates) with a note called “*Petits Papiers*” being written by a third person to be recorded at the *Fokontany*.⁸³ Despite official registration at the community level (*Fokontany* and communes), “*Petits Papiers*” is not regarded as a legal document by the national land administration authority, or used to protect land rights of owners from anyone outside their community.⁸⁴ Compounded with the high cost and lengthy procedures involved in the legal registration process, and the low public service capacity in land management and registration, especially in rural areas,⁸⁵ only approximately 7% of land in Madagascar was legally registered as of 2006,⁸⁶ leaving the land status quite unstable for the majority of landowners.⁸⁷ It was difficult for local land registration offices alone to improve the situation because these offices were located only in major provincial towns and had limited human capacity and financial resources to complete coverage.

78 IFAD, Rural Poverty in Madagascar, Rural Poverty Portal, IFAD, <http://www.ruralpovertyportal.org/country/home/tags/madagascar> retrieved in November 2013.

79 Jacoby, Hanan, and Bart Minten, 2006, Land Titles, investment, and agricultural productivity in Madagascar, Report for the World Bank, http://siteresources.worldbank.org/INTPSIA/Resources/490023-1120841262639/Madagascar_Land_Titling_PSiA_Final_2006.pdf

80 Leisz, Stephen. 1998. Madagascar Country Profile, *Country Profiles of Land Tenure: Africa*, 1998, Research Paper No. 130, Bruce, John W. et al, pp223-230, Land tenure Center, University of Wisconsin, http://pdf.wri.org/ref/elbow_98_synthesis.pdf

81 Approximately 78% of farmers obtain their land through inheritance (World Bank, 2003, *Madagascar Rural and Environment Sector Review*. Vol. 1: Main Report, No.26106-MG, World Bank, Washington D.C.)

82 Evers, Sandra et al. 2006, “National legislation and local practices: competing jurisdictions in land management in Madagascar” *TALOHA*, No 16-17, 1 September, <http://www.taloha.info/document.php?id=336>

83 *Fokontany* is the smallest administrative unit in Madagascar, below communes.

84 Teyssier, André et al, 2008, *Decentralization of land management in Madagascar: Process, innovations, and observations of the first outcome* <http://siteresources.worldbank.org/INTIE/Resources/475495-1202322503179/LandDecentralizationinMadagascar.pdf>

85 *Ibid*

86 World Bank, 2009, *Doing Business Report: Madagascar 2009*, Washington D.C.

87 The issue of land rights insecurity has been recognized by the Government of Madagascar (Teyssier, André. et al 2007, *Land Reform in Madagascar*, or opting for local competence. *FAO Land Reform, Land Settlement and Cooperatives*, P. Munro-Faure, et al. pp34-49, FAO, Rome) <ftp://ftp.fao.org/docrep/fao/010/a1047t/a1047t00.pdf>

(2) The National Land Programme and recognition of primary land rights

To remedy the situation, the Government of Madagascar officially launched the National Land Programme (PNF – *Programme National Foncier*) in 2005. The main objective of PNF was to promote land registration for improved land tenure security especially in remote areas where the majority of the Malagasy population resides and land administration services are not accessible.

PNF comprised the following four components: i) restructuring and modernizing land service administration, ii) improving and decentralizing land management, iii) renewing laws to adapt the legislation to the principle of decentralization and actualize/regularize land occupancy according to land tenure, and iv) a national training programme to build capacities to operate innovative land tenure management to be introduced.

Under the Decentralized Land Management (DLM) system promoted by PNF, land management services were decentralized to community level. Local land management offices were established at communes and provided with necessary equipment (e.g. computers, printers, GPS, satellite images and aerial photos), staff training and authority to issue legal land certificates, based on the Local Plan for Land Occupation or *Plan Local d'Occupation Foncière* (PLOF). PLOF consisted of satellite images providing information on land use. The DLM process was accompanied by new legislation and legal framework that the Government of Madagascar adopted. The new legal framework contains a major innovation: the private property rights can always be materialized not only by a formal land title, but also by recognition of land ownership through customary rules even without legal titles.⁸⁸ With this new legislation, legal land titles were given to a number of landowners whose ownership had been recognized only by customary rule. Despite some limitations in service delivery through the DLM system such as insufficient technical, financial and human resource capacities, PNF established 39 communal offices by the end of 2007 (the end of the first phase of PNF), and was able to issue more than 2,400 land certificates covering 2,900 ha in total (Teyssier et al, 2008).

(3) Remaining issues relating to the recognition of secondary land rights

Despite still facing numerous capacity and financial constraints, the implementation of the DLM accelerated the decentralization of land registration services and thus considerably improved legal land registration in many regions of the country. However, the new legislation supportive of the DLM created a loophole related to protection of the secondary land rights. According to *Law 60-004 of 15 February 1960* and its application in practice, the ownership of land can be transferred to those who have actually developed and cultivated the land continuously for a certain period of time (*Article 18*, indicates ten years),⁸⁹ even when the landowners' title for, i.e. leased land plots, is legally supported and affirmed by formal documents. The current land law can, thus, threaten the tenure of landowners who do not cultivate the farmland by themselves, but utilize it through some arrangements in which other farmers can use their land for production such as land lease or sharecropping. The fear among landowners of expropriation or loss of their land led to lease arrangements involving very short periods such as only one to two cropping seasons,⁹⁰ and/or abrupt termination or non-renewal of such land-use arrangements altogether. It results in insecure land-use rights (secondary land rights) for lessees who often have no or little landholding of their own, and it can critically affect their household economy and food security. Such an insecure circumstance made lessees risk-averse, thus they do not invest in farm inputs such as fertilizer and seeds, do not apply improved agriculture technology, or do not make additional efforts to improve irrigation facilities on leased plots. The landowners, despite their ownership, had no incentive to improve or even maintain the irrigation and soil conditions of leased parcels, since they gained no benefit from cropping results and their interest ended with the rent for parcels paid by lessees. The leased land, thus, often remained unproductive and lessees' livelihoods continued to be critically difficult. For the fear of losing access to leased land on which the lessees' survival depends, lessees could not raise the issue and claim better protection of their use rights. Being insidious, negative impacts of insecure secondary land rights were often overlooked by policymakers. As a result, leased parcels remain with poor irrigation conditions with low application of improved farm inputs, resulting in poor harvests by producers. This situation prevailed widely in rural areas in Madagascar, and results especially in the rice sector, which accounts for the largest area under cultivation, performing far below its potential. This issue of land tenure insecurity and secondary land rights is revealed as one of the most critical bottlenecks to increasing production and productivity, and thus to food security and agricultural growth in Madagascar.

88 Law No.2005-019 of October 17, 2005

89 Law 60-004 of 15 February 1960, Article 18

90 World Bank, 2003, *Madagascar Rural and Environment Sector Review*. Vol 1: Main Report No.26106-MG, World Bank, Washington D.C. Bellemare, Marc F., 2009, "Sharecropping, Insecure Land Rights and Land Tenure Policies: A Case Study of Lac Alaotra, Madagascar", *Development Policy Review* 27(1):pp87-106. <http://onlinelibrary.wiley.com/doi/10.1111/j.1467-7679.2009.00437.x/pdf>

7.2 General Description of the Model

Surveys conducted among farmers in Migodo I and II irrigation schemes for the IFAD-funded “Project to Support Development in the Menabe and Melaky regions (the AD2M project)”⁹¹ confirmed this land tenure insecurity as the most important bottleneck for income generation and food security. Based on the results of the survey, the project designed and implemented a land tenure security component in partnership with PNF. The component complemented the DLM system with protection for land-use rights of lessees, while reassuring landowners of their tenure rights, through introduction of negotiated contracts (*les contrats négociés*) in target irrigation schemes, which are an innovative solution in Malagasy contexts to help address various risks inherent to land lease in Madagascar.

In negotiated contracts, the terms and conditions were negotiated and agreed to between concerned parties, and the land lease agreements and/or contracts on sharecropping are formalized with clearly defined specific clauses, with: (i) securing lessees’ and/or sharecroppers’ benefits from farming activities in leased parcels, while (ii) guaranteeing the land ownership of lessors over the leased parcels that shall prevent the application of *Law 60-004 of 15 February 1960, Article 18*, so the landownership will be maintained regardless of the land lease period. The transparent and formal nature of the contract assures the rights of both parties (landowners and lessees/sharecroppers), and the land-use rights given to lessees/sharecroppers through the negotiated contracts are called the secondary land rights (*Droit Foncier Secondaire*). For the smooth introduction of negotiated contracts, the PMU of the AD2M project involved not only communal land management offices, but also the social workers from NGOs operating in the project areas. The process for the negotiated contracts generally starts with the analysis of the issues related to land parcels to lease. It is followed by a sensitization campaign where the nature of the contract as well as the roles and responsibilities of the staff of the communal land management offices and the contract parties are explained. Finally, concerned parties proceed with the negotiation of the terms and conditions of the lease contracts ending with their signature. The project staff and partner social workers generally mentor commune officials during the whole process of negotiation and provide advisory supports and intermediation services for demonstrating to the officials from the local land management offices.

The project adopted the gradual expansion approach where introduction and operation of negotiated contracts are first verified in pilot areas for later expansion. This approach enabled gathering knowledge on the specific land-related issues in each area and tailoring the project response to those issues through adequate adaptation of the model. In this way, the project could avoid the one-size-fits-all approach that can overlook differences among target communities under the project.

As a first pilot, the system of negotiated contracts was introduced to Migodo I and II irrigated schemes in the Ankilizato community. In this pilot, the AD2M project assisted the negotiation of 16 land rental contracts between 11 landowners and 14 land lessees (one lessee had three separate contracts). These contracts related to more than 11 ha, and were registered at the communal land management office. The period of the lease contracts ranged from 1 to 6.5 years. This already represented a major achievement as normal practice was to lease land for a single cropping season (even in the best cases, land was leased for just a few seasons – 1 to 1.5 years).

According to the project survey, both landowners and lessees/sharecroppers expressed their appreciation for the positive effects of the contracts. Landowners felt that, as a result of the contracts, their ownership was unquestionable by lessees or any third party for that matter, while lessees and sharecroppers felt reassured of their rights to adopt a long-term perspective for the management of their plots, thus being able to make optimal financial and labour investments on land plots and maximize their production and productivity.

91 In French, the project is called *Le Projet d’Appui au Développement du Menabe et du Melaky*

In addition to these direct positive effects, negotiated contracts had indirect and still positive effects. One of these was to accelerate the land registration process. Land lease agreements undergoing the process of negotiated contracts must be registered at communal level and these need to be accompanied by land certificates issued by communal land management offices proving ownership by the lessor. This means that landowners should formally register parcels subject to lease agreement through the DLM system in order to apply negotiated contracts. Convinced by its benefits, a number of landowners were motivated to make their land lease/sharecropping agreement under the negotiated contracts, thus formalizing their land ownership through the DLM land registration process.

Negotiated contracts also brought benefits to land lessees. Details and precision are required for negotiated contracts on the land-lease or sharecropping, and it obliges farmers to submit an annual or even multi-annual plan for the crop rotations on the parcels. Therefore, the negotiated contracts did not only comfort farmers with assured land-use rights over the respective periods, but also provided them with opportunities to better plan their land use.

In summary, the negotiated contracts introduced under the AD2M project complemented the DLM system under PNF, and promoted land security for both parties through establishing a new partnership between landowners and lessees/sharecroppers. This helped secure land ownership and land use rights of lessees/sharecroppers thus encouraging producers to increase investments in agricultural production and to adopt effective agricultural technologies. Given the positive results obtained through the above pilot test, the AD2M project is currently scaling-up the model in other irrigation schemes across the region, specifically in the Tsarahotana irrigation scheme, where a number of land leasing and sharecropping arrangements can be found.

The following gives the summary information of the AD2M Project:

Table 7.1: Summary of the AD2M Project

Project Title	Project to Support the Development of Menabe and Melaky regions (Projet d'Appui au Développement du Menabe et du Melaky - AD2M)
Project Period	2006–2015 (9 years)
Target areas	Regions of Melaky (15 Communities) and Menabe (5 Communities)
Budget	USD 23.8 million
Funding Agency	The Government of Madagascar, IFAD, European Union
Implementer	Ministry of Agriculture, Livestock and Fisheries through a Project Management Unit (PMU) responsible for AD2M
Target Beneficiaries	40,000 households as direct target
Narrative Summary	<p>< Overall Project Objective> To improve the access of rural poor to the land (land tenure) and water resource (development and effective management of lowland and small watersheds) in order to optimize agricultural production and ensure a sustainable increase in their income.</p> <p>< Specific Objectives> To support:</p> <ul style="list-style-type: none"> - Policy, process and measures/mechanisms for land rights security at national and local (in the AD2M project areas) levels within the framework of the decentralized land management addressing individual ownership and secondary land rights. - Reform and implementation of the institutional and regulatory framework for the land security for sustainable development of farming system and protection of natural resources. <p><Project Approach> The Project adopts a value chain and production hub approaches to create linkages between producers and markets. Production hubs or poles are relatively homogeneous areas, with similar agro-ecological conditions, high agricultural potential and high population density, which allows production support functions to be structured and the emergence of producer organizations. These hubs include: the Middle Betsiriry and Tsiribihina floodplain poles, a rice pole, the Tarahotana cereal pole, and the Ankilizato-Malaimbandy and Antsalova rice poles.</p> <p><Project Components> Component 1: Support for local governance and land tenure security 1.1. Support to organizing producers and capacity building of local actors 1.2. Support for land tenure security Component 2: Support to sustainable development of agriculture production base 2.1. Development of rural areas 2.2. Agricultural development and natural resource conservation 2.3. Commercialization, supply and rural finance. Component 3: Project management, monitoring and evaluation 3.1. Project management and coordination 3.2. Monitoring and evaluation, and knowledge management.</p>

[Source]: the AD2M project

7.3 Impacts

As mentioned in the previous section, the following results were observed in the first pilot application of negotiated contracts in Midogo I and II irrigation schemes:

- The model enhanced the legal land registration. The number of land certificates issued in the pilot project areas are, respectively: 178 (2011), 323 (2012) and 540 (2013)
- 16 land lease agreements were made by negotiated contracts between 11 landowners and 14 lessees.
- The total area of coverage under the negotiated contracts is 11.28 ha.
- The period of contracts under the negotiated contracts ranges from 1 (2 cropping: one rice cropping + one rice-offseason cropping) to 6.5 years, while the average period of contracts in Midogo irrigation schemes before the AD2M project used to be 1-2 cropping seasons.
- As summarized in Table 7.2, the IFAD supervision mission to the AD2M project,⁹² carried out from November to December of 2013 also revealed that a total of 12 communal land management offices were established in the Belo TSIRIBIHINA, Mahabo and Miandrivazo districts. The total number of the land certificates issued by these offices amounted to 4,439 as of October 2013, out of 8,187 applications received, accounting for approximately 54% of the total applications submitted. The time and cost required to process the land certificates varies from 2-3 months and MGA (Malagasy Ariary) 20,000-30,000 in areas along the national highway to 3-6 months and MGA 5,000 in remote areas.⁹³

Table 7.2: The number of land management offices, applications for and issuance of land certificates

District	Number of land management offices	July 2012		October 2012		October 2013	
		Applications	Issuance of Land certificates	Applications	Issuance of Land certificates	Applications	Issuance of Land certificates
Belo/T	3	611	194	647	194	687	204
Mahabo	5	3,194	1,994	3,327	2,253	4,815	3,057
Miandrivazo	4	950	425	1,019	543	2,685	1,178
Total	12	4,755	2,613	4,993	2,990	8,187	4,439
Land Certificated issued/ Applications received		55%		60%		54%	

[Source]: IFAD, 2013, *Supervision Report on Projet d'appui au développement du Menabe et du Melaky (AD2M)*

The above impacts on the stability of land rights also influenced the lessees' decision making on cropping, thus causing, together with other AD2M supports, the following rippling effects⁹⁴ on farming intensification and development of the agriculture production base:

- The AD2M project observes that the farmers working on plots under negotiated contracts tend to make more investments on farm plots than those working in plots without negotiated contracts. No survey or systematic evaluation has yet been conducted to compare behaviours between land-secured farmers and others, and therefore no exact figure is available. Nonetheless, the AD2M project staff observed that land-secured farmers not only use more fertilizer and chemicals, but also work on improving irrigation and increase the number of farm labourers needed for cropping on land.

⁹² IFAD, December 2013, *Supervision Report on Projet d'appui au développement du Menabe et du Melaky (AD2M) - Rapport principal et appendices*, available at <http://operations.ifad.org/documents/654016/49f5aba4-66af-413a-8b71-2c97fe3dc0b0>

⁹³ *Ibid*

⁹⁴ The information was obtained from the project manager of AD2M through interviews by the author.

- ii) Increased adoption of better farming practices to increase rice yield are observed: frequent weeding, secondary cropping during the rice off-season and increased use of improved technology such as fertilizer among others.
- iii) Securing secondary land rights has contributed to the increase of secondary cropping during the rice off-season due to the certainty for future and better planning, and thus resulted in agricultural diversification and additional income opportunities for rice producers. The cultivation area for onions and beans, the major secondary crops for rice, in the Migodo irrigation scheme has increased from 5 ha in 2010 to 45 ha in 2013.
- iv) The secondary cropping is practiced with additional application of organic manure in the project areas, thus giving positive impacts on rice harvest as well. The rice yield of plots where secondary cropping is practiced as a result of stabilized land rights is, on average, 0.8 t/ha higher than that of the other plots.

And the above changes cumulatively contributed to the increased rice yield in the plots covered under the negotiated contracts from the baseline of 1.5 t/ha in 2007, to 3.75 t/ha in 2011, 4.25 t/ha in 2012, and 5t/ha in 2013. This yield increase also improved average annual income of producers by more than 20%. In addition, the commune revenue increased due to increased tax collection as a result of formalization of contracts and increased legal land registration.⁹⁵

7.4 Analysis of the Success Factors

The followings are main factors that made the model successful in land security in Madagascar:

(1) High demand for solutions to land insecurity issues

Landowners and lessees/sharecroppers have longed for secure land ownership and secondary land rights, respectively, for many years. Realization of land security calls for reconciliation between all concerned parties regarding land use issues. In the selected areas, slash-and-burn cultivation, clearing, bush fires and indiscriminate logging were all still practiced and land tenure conflicts between farmers and herders were still to be resolved. Negotiated contracts, with the advisory and other supports through the AD2M project, helps assure owners' land tenure security while protect the secondary land rights of the lessees. The model met needs of landowners and lessees/sharecroppers and was therefore accepted by all concerned parties.

(2) Existence of favourable land policy, legislation and programmatic framework

The Government of Madagascar showed strong determination to solve land tenure insecurity issues. Before the AD2M project, the Government had launched PNF introducing the DLM system, which permitted local issuance of land certificates and enactment of the new land law, *Law No.2005-019 of October 17, 2005*. As a result, the AD2M project could benefit from a favourable legal, policy and programmatic framework and build on the opportunities for change that it created.

(3) Partnership with implementing institutions

The project adopted the approach where supports are provided to the local implementation structure with full utilization of local resources, and it contributed to the sustainability of the land-security-assuring mechanism of the model. The project interventions with negotiated contracts were intended to complement the government efforts towards land security assurance. The system of negotiated contracts was, therefore, introduced with full utilization of the DLM system which was established to implement PNF. PNF designated communal land management offices to register and legalize negotiated contracts, and the AD2M project provided advisory supports to them, thus helping strengthen their operational, managerial and technical capacity. Also, the introduction of negotiated contracts was carried out, in collaboration with social workers of NGOs operating locally in the target areas and capable of delivering the sensitization campaign and the social intermediation services that project staff alone would have not been able to deliver.

⁹⁵ All data referred in this section were gathered from the AD2M project manager, through interviews by the author.

(4) Strengthening of intermediation capacity

The project strengthened the capacity of communal land management offices in operation and management of negotiated contracts, which were new to Madagascar. Supports were provided along the whole process of negotiated contracts, through coaching and technical advice in management as well as occasional direct action by the AD2M staff in interactions with contract parties for demonstration to officers of the communal land management offices. These supports resulted not only in sound operation in the pilot areas, but also a significant contribution to consequent sustainable operation of negotiated contracts.

(5) Adoption of participatory approaches

The project adopted a participatory approach to both designing and implementation of its activities. Issues were identified together with community members, and those more frequently recurring in each commune were examined and taken into consideration during the intervention designing. This approach was crucial to effectively address land issues in the contexts specific to each commune, given the complexity and diversity of land conflicts, which are influenced by customs, culture and members of communities.

(6) Attention paid to scaling-up triad

The project paid particular attention to the learning element in composing the scaling-up triad: innovation, learning (and adaptation) and scaling-up. The model was first carefully tested at small scale in selected communities of the target area to be followed by expansion after confirming the results and validity of pilots. This made the project interventions more relevant and effective in addressing issues at each locality and prevented the project from taking a one-size-fits-approach across all project target irrigation schemes in communes of diverse cultures and traditions. Certainly, there is no universal solution for land issues, and solutions and implementation approaches should be tailor-made to each commune. In this regard, the pilot-based approach involved a gradual expansion to new areas, and was the key to the project's success.

7.5 Scalability Assessment

Utilizing the Scalability Assessment Framework with *Scaling-Up Framing Questions* developed by IFAD in collaboration with the Brookings Institution, the replicability of the model in other Sub-Saharan African countries was assessed as shown below in Table 7.3.

Table 7.3: Scalability Assessment

Framing Questions		
Idea	What is the intervention to be scaled-up?	Protection of landownership and secondary land rights through introduction of negotiated contracts
	Whose idea?	The AD2M Project
	Has it been tested/ piloted?	Yes, with significant success in target areas.
Vision	What could be the appropriate scale of the intervention?	The vision for scaling-up should be determined by the countries adopting this model, taking into consideration government priority, needs, political support from local leaders, available financial resources, availability of financial and technical supports by development partners (e.g. donors, NGOs, civil society) and public administrative capacity at both central and local levels.
Drivers	What or who are the drivers for the scaling-up process ahead? (including local leaders or champions, external catalysts and incentives)	<p>Potential drivers for scaling-up the model include:</p> <ul style="list-style-type: none"> • Demand for solutions to land issues by landowners, lessees and sharecroppers; • Governments with commitment to tackling the land tenure insecurity; • Legal, policy and institutional framework to support this model; • IFAD as a champion of the model; • Other development partners concerned with land security issues, and; • Local government, NGOs and community organizations and their leaders as catalysts.
Spaces	Political	Strong political commitment at all levels from the national to the grassroots to tackling land insecurity issues is the most important determinant of the political space for the replication of the model in other countries. Land issues are politically sensitive. Therefore, for instance, if the government and/or local leaders are involved in the land leasing, and if they would lose their benefit by adopting this model, its replication will fail due to lack of their political support.
	Policy	Policy space for adopting this model generally exists in countries where land security is not sufficiently assured, since the need to have land security for both landowners and peasants could encourage policy makers to introduce this model. This space is larger in countries where the government already puts favourable land policies in place, which are supportive of the decentralized land management system.
	Legal	Favourable legislation and legal framework, or at least the government will to set them up prior to adoption, is a necessary condition for replication of this model.
	Institution	Adoption of this model is possible only if the institutional structures for implementation of the model are available at both national and local levels. Since this model counts on communal land management offices, similar decentralized administrative structure for land management needs to be available.

Framing Questions		
Spaces	Fiscal/Financial	<p>Decentralization of land management involves additional financial resources, since local administration would require increased staffing, training, equipment and operational cost. Replication of the model therefore requires some financial resources.</p> <p>For sustainable operation of the model, these additional costs should be covered by the governments of replicating countries. Therefore, the government financial capacity is a critical determinant for fiscal and financial space, while development partners can also provide some financial supports to expand this space especially for the initial establishment and piloting cost.</p> <p>It is noteworthy that, as observed in the experience in Madagascar, the system established by this model increased tax revenue for both central and local government and thus can generate the resources required for operation of the system.</p>
	Natural Resource/ environmental	<p>While the application of this model could lead to better water and land resource management, it could also cause expansion of cultivated area and increase in water use, since the model would encourage lessees and sharecroppers to intensify and expand their farming activities on leased lands. The availability of sufficient land and water resources, therefore, determines the environmental space for the application of this model. The capacity to manage environmental impact would also be a prerequisite for the replication.</p>
	Capacity	<p>Technical, managerial and operational capacity of local authorities (communal/municipality offices) is prerequisite for implementation of this practice. This capacity space can be created or expanded through capacity building by government, and/or supports from development partners.</p>
	Cultural	<p>This space is determined by the diverse cultural groups inhabiting the target areas and in particular by their traditions and customs related to land ownership, inheritance and dispute settlement. The model requires taking the cultural and customary traditions of target communities into consideration for its adaptation before replication. Pilot testing within a small number of communities first would help the replicating agency understand how best the model should be adapted before bringing it to scale. This learning process would expand the cultural space.</p>
	Partnership	<p>Land insecurity is an issue common to many Sub-Saharan African countries, and a number of development partners are interested in cooperating with governments in tackling it. In application of this model to other countries, there is, therefore, significant space for partnership with development partners, civil society, farmer groups, water users' associations and local administrations concerning land management, land ownership and land use. All of these stakeholders not only need to be involved in finding solutions to tenure insecurity issues but also to be a part of the solution. The replicating agency needs to have adequate capacity, as a result, to create a partnership with them.</p>

Framing Questions		
Pathways	What are the pathways for scaling-up in other countries?	Setting up the policy, legal and institutional framework for application and implementation of the model should come first, if they do not yet exist in replicating countries. Piloting in limited areas would come next to verify its effects, as well as to carefully adapt the model to the local context. Exchanges of adaptation experiences among countries could be beneficial prior to replication.
	What is the time frame for pathways to extend?	
	How do the drivers and spaces define these pathways?	Time frames depend on the extent of the land insecurity issues in the country, target population size and geographical dispersion, cultural diversity, availability of the prerequisite conditions such as whether a suitable policy, legal and institutional framework already exists and the capacity of the replicating country to pilot the model and expand it in multiple areas at the same time.
	Bottlenecks for scaling and risk mitigation.	

7.6 Conclusions

This model can help assure the security of land tenure and land-use rights and thus lead to increased investments in land and inputs for increasing rice production. The experience in Madagascar provides implications on some critical factors and prerequisite conditions for the successful replication of the model in other countries:

(i) Key Success Factors

- High demand for solutions to land insecurity issues,
- Existence of strong national land policy, legislation and implementation framework
- Clear definition of the roles of each stakeholder and the partnership and complementarity with supporting entities such as PNF, DLM and NGOs
- Strengthening of the intermediation capacity for sustainability
- Right project approaches such as grasping issues through participatory approaches, designing interventions to appropriately address issues specific to the local context of the target areas, and gradual expansion based on piloting.

(ii) Prerequisite conditions

- Strong political commitment of government and local leaders for solving land insecurity issues,
- Favourable policy, legal and institutional framework for land management especially at local level for better accessibility and coverage as demonstrated by the DLM in Madagascar,
- Availability of partners who can support implementation of the model at both central and local governments, through technical, and/or administrative supports, coaching in social organization, and facilitating discussions and exchanges among landowners, lessees/sharecroppers, and local leaders involved in negotiated contracts.

Nonetheless, given the complexity and diversity of land issues in different localities, the simple duplication of the model is likely to fail. Customization of the model is necessary in accordance with cultural, legal and social contexts of the target areas where this model is replicated, and the customization needs to be done based on the piloting of the model as well as the detailed research and situation analyses on the localities.

CASE 8:

Paddy Warehouse Receipt System in Tanzania⁹⁶

<i>Basic Information of the Model</i>	
Country	The United Republic of Tanzania
Area of Intervention in value chain	Marketing and Storage - Introduction of the Warehouse Receipt System (WRS)
Mode of Intervention	Policies and projects in implementation of WRS
Implementer	<ul style="list-style-type: none"> – Tanzania Warehouse Licencing Board (TWLB); – Ministry of Agriculture, Food Security and Cooperatives (MAFC); – Saving and Credit Cooperatives Society (SACCOS); – Rural Urban Development Initiatives (RUDI)⁹⁷ – implementer of Tanzania Staples Value-Chain Project (NAFAKA), Competitiveness and Trade Expansion Programme (COMPETE) and Building Rural Enterprises Through Associations project (BRITA); – TechnoServe⁹⁸ – implementer of the Post-Harvest Improvements for Resource Efficiency project (SAPPHIRE); – AMIS International Agriculture Consulting⁹⁹ – implementer of Grain Farmers' Access to Warehouse Inventory Credit Project
Partner Organization(s)/Institution(s)	<ul style="list-style-type: none"> – Common Fund for Commodities (CFC) – funded projects piloting WRS for Coffee and Cotton and Grain Farmers' Access to Warehouse Inventory Credit Project; – IFAD – funded Agricultural Marketing Systems Development Programme (AMSDP) and Rural Financial Services Programme (RFSP); – AfDB – funded AMSDP; – USAID – funded NAFAKA, COMPETE and BRITA; – EU– funded Grain Farmers' Access to Warehouse Inventory Credit Project; – DFID – funding SAPPHIRE

96 This document analyzes WRS of registered warehouses in Tanzania; while quite a few unregistered warehouses function similarly to those in formal WRS. For better and comprehensive understanding of the functions, impacts and potential of WRS, the informal warehouses need to be looked at, even though this analysis does not cover them due to resource constraints on the CARD Secretariat.

97 A Tanzanian NGO working for a private sector development <http://www.rudi.or.tz/>

98 A US-based international Non-Profit Organization that develops business solutions to poverty by linking people to information, capital and markets <http://www.technoserve.org/>

99 A Canadian agricultural firm <http://amisinterag.com/index.php>

8.1 General Description of the Model

(1) Background

In Tanzania, rice is cultivated predominantly by smallholder farmers, largely as a subsistence crop in rainfed areas and as a cash crop in irrigated areas. Farmers generally sell at least a portion of the paddy produced immediately after harvest in order to repay their debts and/or meet other pressing financial needs of their families,¹⁰⁰ and typical market outlets for paddy farmers are often rice mills in the rice value chain in Tanzania.

However, due to the lack of adequate storage facilities and access to finance and marketing means as well as incomplete market chains in production areas, the marketing by smallholder farmers largely depends on local middlemen who purchase their rice and re-sell it to millers.¹⁰¹ In addition to having no alternative market outlets, rice farmers are in a disadvantaged negotiating position when it comes to selling their produce because they are usually not adequately informed on prevailing market prices and they must meet pressing cash needs.¹⁰² Local trading practices are often substandard in terms of the trustworthiness of weighing scales and the separation of paddy by type and quality as well as the quality of packaging. This issue of limited market access and lack of storage capacity was a common problem not only for rice but also most agricultural products produced in Tanzania.

One of the possible solutions to this marketing problem is the Warehouse Receipt System (WRS), which is the collective storage of farm produce in common warehouses with receipts for stored production. The underlying principles of financing against stored products date back several thousand years ago (the oldest record was found in Mesopotamia).¹⁰³ However, a legal and regulatory WRS in modern society was developed in the U.S. and adopted by farmers in South America and Europe since the 1920s. WRS is applicable to various kinds of crops and commodities, including rice, and it works better for high-value crops since its benefit in mitigating risk from price volatility needs to be higher than the cost involved in the WRS operations.

The Common Fund for Commodities (CFC)¹⁰⁴ funded the implementation of two regional technical assistance projects targeting Tanzania, Uganda and Zimbabwe to support functional warehouse operations for coffee and cotton.¹⁰⁵ After the project appraisal and approval, the implementation of the project in Tanzania started in January 2001 with the objectives to increase export earning, farm income and production, and improve the marketing systems of these commodities through establishing the WRS pilot.¹⁰⁶ The project pilots made a remarkable achievement with the total deposit amount in WRS for coffee parchment and cottonseed, respectively reaching 12,022 tons and 1,200 tons in 2006.¹⁰⁷

Meanwhile, with the financial supports from IFAD, the African Development Bank (AfDB) and Irish Aid, the Government of Tanzania launched the Agricultural Marketing Systems Development Programme (AMSDP) in 2002, a seven-year programme whose sub-components included the introduction of pilot WRS for maize and paddy.¹⁰⁸ Prior to the piloting of WRS in AMSDP, the Government of Tanzania enacted the Warehouse Receipts Act No. 10 of 2005 (the Act) that defines the legal framework for WRS in Tanzania and gives Tanzania Warehouse Licensing Board (TWLB)¹⁰⁹ authority to issue the warehouse license for the conduct of warehouse business and to supervise all WRS-related operations. It is noteworthy that AMSDP contributed to the process for the

100 Lengale, 2013, *Tanzania Warehouse Legal Framework and its Impact on Sesame and Rice Farmers*

101 Skjöldevald, 2008, *Small-scale farmers and the shift in the food trading paradigm*, Södertörn University College

102 Morgan K et al., 2006, *Worlds of food – Place, Power and Provenance in the Food Chain*, Oxford University Press

103 FAO Investment Center, 2009, *The use of warehouse receipt finance in agriculture in transition countries*, the Working Paper presented at the World Grain Forum 2009, available at <http://www.fao.org/3/a-i3339e.pdf>

104 CFC is an autonomous intergovernmental financial institution established within the framework of the United Nations. <http://www.common-fund.org/>

105 The projects for: Coffee Market Development and Trade Promotion in Eastern and Southern Africa (CFC/ICO/03FA), and; Improvement of Cotton Marketing and Trade Systems in Eastern and Southern Africa (CFC/ICA/12FA)

106 See the project details at the project website of the National Resource Institute (NRI) of the University of Greenwich which is the leading player in the project implement consortium. <http://projects.nri.org/wrs/index.htm>

107 The details are available at the NRI project website at <http://projects.nri.org/wrs/tanzania.htm>

108 Matabe, L., 2010, *Case Study Report On Warehouse Receipt System Under AMSDP, Tanzania*, and the project completion report of AMSDP to IFAD and AfDB, respectively available at <http://operations.ifad.org/documents/654016/4c078b84-c3f3-46db-af1c-e2f4a25ef2bf> and <http://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/Tanzania.%20Agricultural%20Marketing%20Systems%20Development%20Programme%20-EN.pdf>

109 TWLB is the government agency under the Ministry of Industry and Trade with its mission to regulate and promote WRS for all agricultural commodities and such other goods as the Minister declares

enactment of the Act,¹¹⁰ and the achievements of the CFC projects provided precious lessons and implications for the contents of the Act. The Act was complemented by the issuance of warehouse operational guidelines, which provided further guidance on how to run the WRS operations in Tanzania today.

Besides AMSDP, IFAD supported the Government of Tanzania in the implementation of the Rural Financial Services Programme (RFSP) from 2001 to 2010. RFSP was designed to improve access by the rural poor to financial services and to develop a rural financial architecture with roots at the village and ward level in the form of semi-formal Savings and Credit Cooperative Societies (SACCOS). In the WRS operations in Tanzania, most warehouse receipts are issued in a negotiable form, making them eligible as collateral for loans. The Warehouse receipt finance is often provided through SACCOS in Tanzania, therefore the roles played by SACCOS in WRS operation are crucial. However, the promotion and capacity building of SACCOS was not included in the scope of AMSDP, thus AMSDP needed to closely work with RFSP that includes a capacity building component for SACCOS. AMSDP and RFSP signed a memorandum of understanding to strengthen the linkages between the two programmes, and this enabled a joint selection of target areas and the extension of RFSP capacity building services to selected SACCOS that had been earmarked for WRS in AMSDP target areas.¹¹¹ Since financing is one of the core functions of WRS, the strengthened capacity of SACCOS by RFSP significantly contributed to the impacts achieved by the pilot WRS in AMSDP.

Despite these supports, the Government of Tanzania needed further assistance in various areas for the operations of WRS since the introduction of WRS was a totally new concept for the country. A number of interested development partners offered their technical and financial assistance related to WRS such as awareness creation, capacity building, piloting and development of the model mechanisms for WRS financing, institutional supports such as establishment of associations for warehouse operators and depositors, as well as renovation of warehouses. These supports were provided in the form of projects, in order to increase the overall adoption of WRS and the efficiency of its operations. Major contributions from development partners are summarized in Table 8.1.

110 IFAD and The United Republic of Tanzania Prime Minister's Office, 2010, *Agricultural Marketing Systems Development Programme Completion Report*. pp34

111 Matabe, L., 2010, *Case Study Report on Warehouse Receipt System Under AMSDP, Tanzania*

Table 8.1: Summary of the programmes and projects related to WRS

Development Partner	Implementer	Name of the project/programme	Project Period	Project Budget	Areas of Supports
CFC	A consortium of implementers including National Resource Institute (NRI)	Project for Coffee Market Development and Trade Promotion in Eastern and Southern Africa ¹¹²	2001-2006	USD 9.1 million	<ul style="list-style-type: none"> - Promotion of a privately run Warehouse Receipt System - Development of a basic Marketing Information System (MIS) for Coffee - Development of a system of Commodity Trade and financing based on Inventory Collateralization using WRS and Testing the System through Trade Financing
CFC	A consortium of implementers including NRI	Project for Improvement of Cotton Marketing and Trade Systems in Eastern and Southern Africa ¹¹³	2001-2006	USD 24.8 million	<ul style="list-style-type: none"> - Promotion of a privately run Warehouse Receipt System - Development of a basic Marketing Information System (MIS) for Cotton - Development of a system of Commodity Trade and financing based on Inventory Collateralization using WRS and Testing the System through Trade Financing
USAID	ACDI/VOCA Rural Urban Development Initiatives (RUDI)	Tanzania Staples Value-Chain (NAFAKA) Project ¹¹⁴	2011-2016	USD 30 million	<ul style="list-style-type: none"> - Capacity building to farmers in WRS - Farmer training on the use of inputs and collective marketing
USAID	RUDI	Competitiveness and Trade Expansion Programme (COMPETE) ¹¹⁵	2011-2013	USD 250,000	<ul style="list-style-type: none"> - Renovation of ten (10) warehouses - Capacity development for warehouse operators
USAID	RUDI	Building Rural Enterprises Through Associations (BRITA) project ¹¹⁶	2007-2012	USD 300,000	<ul style="list-style-type: none"> - Promotion of WRS - Capacity building of producers in collective marketing - Capacity building of warehouse operators and producers in post-harvest handling

Development Partner	Implementer	Name of the project/programme	Project Period	Project Budget	Areas of Supports
EU, CFC	AMIS International Agriculture Consulting	Grain Farmers' Access to Warehouse Inventory Credit Project ¹¹⁷	2008-2011	USD 5.33 million	<ul style="list-style-type: none"> - Refurbishment of warehouses in selected target areas important in grain production; - Refinement of quality standards and operational procedures of warehouse licensing bodies; - Development of verification procedures, registry of warehouse receipts, and default protection mechanisms; - Capacity building at primary producer level to give farmers the possibility to benefit fully from warehouse receipts; - Support for the use of warehouse receipts in exchange trading operations.
DFID	Techno Serve	The Storage and Proper Post-Harvest Improvements for Resource Efficiency Phase II (SAPPHIRE II) project ¹¹⁸	2012-2017	USD 5 million	<ul style="list-style-type: none"> - Improvement of WRS

¹¹² Information obtained from the NRI project website and the CFC statement at the meeting of the Commission For Africa (CFA) in New York in October 2004 pp8-9, respectively available at <http://projects.nri.org/wrs/index.htm> and http://www.common-fund.org/fileadmin/user_upload/Statements/2004/ny_25-11.pdf

¹¹³ *ibid*

¹¹⁴ The project information was obtained from the website of ACDI/VOCA and RUDI at respectively <http://www.acdivoca.org/site/ID/tanzania-staples-value-chain-NAFAKA> and <http://www.rudi.or.tz/current-projects/80-project-no-1-building-rural-income-through-associations-brita-project-january-2007-posted-on-february-20-2009.html>

¹¹⁵ COMPETE was rebranded to the East Africa Trade Hub in an effort to harmonize the USAID brand across the three regional trade hubs. <http://www.eatradehub.org/about/index.php>

¹¹⁶ Information collected from the RUDI website at <http://www.rudi.or.tz/using-joomla/extensions/components/search.html?searchword=BRITA&searchphrase=all>

¹¹⁷ The project information is available at the CFC website at <http://www.common-fund.org/projects/project/grain-farmers-access-to-warehouse-inventory-credit-in-ethiopia-and-tanzania/> and http://www.google.com/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=4&ved=0CDMQFIAD&url=http%3A%2F%2Fwww.euacp.commodities.eu%2Ffiles%2F0ESAF02.doc&ei=tOwOVmMUMdpcasktgbgM&usq=AFQjCNEXL2cTrnNS1y-hoSWXs1nQEL9UgDA&sig2=PpHwwVolM7o94b_yGamCHzw

¹¹⁸ Information obtained at <http://www.linkedin.com/jobs2/view/10739474>

(2) WRS operation in Tanzania

As a result of these efforts made by the Government of Tanzania and development partners, a total of 25 paddy warehouses are operating as of 2013 in various parts of Tanzania, and their total storage capacity is approximately 8,450 tons. Specifically, 11 of them have storage capacities of 500 tons; three of 250 tons; and another 11 of 200 tons.¹¹⁹ Most of the warehouses are medium-sized (200-500 tons) and are located in rice-producing areas.

In Tanzania, most of the paddy warehouses are built with financial support from the central Government, owned by local governments and/or communities, and are mostly maintained and operated by private service providers (in some cases, farmer groups). TWLB is responsible for licensing the warehouse operators, validating and authorizing the receipts and overseeing the implementation of WRS in Tanzania as well as providing training to warehouse operators.

WRS functions as follows, and contributes to integrate various actors along the commodity chain:

- The depositor takes his/her produce to the registered warehouse. The warehouse operator assesses the quality of paddy before accepting the lot, in order to confirm that the produce meets the specifications of WRS. Then the warehouse operator issues a 'warehouse receipt' that certifies the title of deposited commodities as of specific ownership, value, type, quantity, quality (grades), the date deposited and the date up to which storage costs have been paid. The warehouse receipt serves as a document guaranteeing the existence and availability of a given quantity and quality of stored produce.
- In exchange, the depositor pays storage and other operational fees agreed to in the storage contract.
- The warehouse operator guarantees delivery of the produce to either the depositor himself/herself upon submission of the receipt, or to buyers/traders when the receipt so authorizes.
- The depositor waits to sell his/her produce in the warehouse until market conditions are favourable. In the meantime, the depositor can use the receipt as collateral and access finance from financial institutions.
- The warehouse receipts issued are usually negotiable ones that can be transferred to other parties, for example, in exchange for a loan. Therefore, in many cases, the depositor sells the receipt to millers, traders or other trade counterparties. In these cases, the new holder is entitled to take delivery of the commodity upon presentation of the warehouse receipt.
- Hence, if the depositor requires short-term financing, he/she can obtain it from the financial institutions, using the deposited produce on the warehouse receipt as collateral. For instance, the depositor can take a loan (an advance payment for the deposited produce) from SACCOS of up to 70% of the value of the deposited produce.¹²⁰
- Should the depositor take a loan using the deposited produce as collateral, the payment for the produce should be channelled through the financial institution from which the depositor took the loan. The financial institution deducts the loan amount, accrued interest and other charges, before crediting the account of the depositor with the balance.
- A depositor who has not taken any loan against the deposited produce will be entitled to the full proceeds from the sale.

Thus WRS in Tanzania provides farmers with access to quality warehouses and financing opportunities. WRS also benefits commodity chains through filling seasonal financial and commodity supply gaps, quality assurance, reduction of post-harvest losses, and ensuring the trade security for all the actors. Safe storage extends the selling season for farmers and reduces their risk and increases opportunities from seasonal price swings.

119 Warehouse Licensing Board, 2013, The Register of Warehouses 2013-14 <http://wrs.go.tz/references.php#>

120 Towo, N. and Kimaro, P., 2013, "Warehouse Receipt System: A Solution towards Smallholder Farmers Financial Constraints", *MUCCoBS Working Papers* No. 12, Moshi University College of Cooperative and Business Studies

8.2 Impacts

A recent assessment¹²¹ shows that, rice farmers did not deposit their paddy in the registered warehouses until 2009 as the WRS was not fully operational in rice producing areas. In 2009/10, a total of 1,111 tons of paddy were deposited in the registered warehouses under WRS and an additional 262 tons of paddy were stored in 2010/11.¹²² It is noteworthy that the price of milled rice in Dar es Salaam markets increased from TZS (Tanzanian Shilling) 800,000/ton to over TZS 1,000,000/ton between August 2011 and December 2011,¹²³ which was equivalent to approximately USD 483/ton to USD 604/ton.¹²⁴

A majority of the farmers storing their paddy stocks in the registered warehouses benefitted from selling the paddy during this period. In August 2012, the farm gate price for paddy at harvest was TZS 200/kg. After storing their paddy in secured warehouses for four months, farmers were able to sell for TZS 450/Kg, earning more than double the harvest farm gate price.¹²⁵

Presently, warehouse receipts are accepted as valid collateral by most public banks in Tanzania and rice farmers who stored their paddy lots in the warehouses had better access to finance. For instance, the total amount of credit disbursed through WRS by the National Microfinance Bank (NMB), a leading agriculture financing bank, has reached TZS 113 billion (approximately USD 68.3 million) in 2011,¹²⁶ equivalent to 40% of the total agriculture credits disbursed by the bank. The CRDB Bank, the lead bank involved in AMSDP, highlighted the success of WRS pilots for paddy rice, saying it has a TZS 2.9 billion (equivalent to approximately USD 1.8 million) portfolio of microfinance-linked loans, equivalent to about 10,000 tons of paddy.¹²⁷ Thus the warehouse receipt system has increased the access to finance by farmers who hitherto depended on other tangible assets for obtaining the loans.

Farmer groups organized under the projects implemented by the Rural Urban Development Initiative (RUDI) were able to secure financing from NMB and Stanbic Bank through utilization of the WRS for a total of USD 40,000 in 2012.¹²⁸ Such financing has allowed farmers to store paddy for longer periods, avoiding situations where they have to sell their produce even when the price is low, and thereby enjoy higher prices.

The AMSDP completion report by IFAD and the United Republic of Tanzania Prime Minister's Office revealed the following facts: the business relations between banks, SACCOS and smallholder farmers were strengthened, resulting in more favourable loan terms for agricultural producers; interest rates for commercial loans were reduced from 20% to 13%; and, the introduction of WRS in the pilot areas created employment in various activities related to the warehouse system, such as transportation, dusting and security.¹²⁹

In addition, IFAD assessed that the WRS scheme enabled farmers to improve the quality and increase the quantity of their produce, and to increase the access to financial services and loans.¹³⁰ Also, after the introduction of WRS, farm gate prices increased up to 300%, having led to an immediate and positive impact on farmers' income.¹³¹

Overall, WRS improved the competitiveness and marketability of locally produced rice, since the quality of produce traded through WRS is assured by the quality standard set in the system. The consistent standards and grades of produce meet the demand of buyers, resulting in smooth trading with reduced transaction costs. More importantly, the quality assurance of WRS allows buyers and producers to enter confidently into a purchase agreement without concern on the quality of the commodities concerned.

121 Warehouse Licensing Board Resources, 2013, Summary of grand total of the performance of warehouse receipt since 2008; <http://wrs.go.tz/resources.php>

122 *Ibid*

123 Lewis, I., 2012, Tanzania's Rice sub-sector and value chain - Analysis & Review and Proposed Vision & Strategy for Improved Competitiveness & Growth, FAO

124 The average exchange rate from August to December 2011 was USD 1 = TZS 1,654.5

125 Rural Urban Development Initiatives, 2012, Warehouse receipt system: RUDI experience <http://rudi-tz.org>

126 This total amount covers all crops including rice.

127 Coulter, J., 2009, *Review of Warehouse Receipt System and Inventory Credit Initiatives in Eastern & Southern Africa*, A working document commissioned by UNCTAD, under the All ACP Agricultural Commodities Programme (AAACP), pp29

128 Warehouse Licensing Board Resources, 2013, Summary of grand total of the performance of warehouse receipt since 2008; <http://wrs.go.tz/resources.php>

129 IFAD and The United Republic of Tanzania Prime Minister's Office, 2010. *Agricultural Marketing Systems Development Programme. Completion Report*

130 IFAD, Independent Office of Evaluation, 2011, Rural Financial Services Programme and Agriculture Marketing Systems Development Programme. Interim Evaluation, pp17

131 *Ibid*, pp34

8.3 Analysis of the Success Factors

The followings are major factors that enabled successful implementation of the warehouse receipt system in Tanzania:

(1) Strong legal and policy framework supporting the system

The warehouse operation in Tanzania is regulated through the Warehouse Receipts Act No. 10 of 2005 (the Act) and the warehouse regulations of 2006 that clearly define the roles played by public entities and how they interact with the private sector (warehouse operators, financial institutions and producers) in WRS operation. Besides being responsible for licensing the warehouse service operators and overall supervision of WRS operation, TWLB plays a major role in policy advocacy and in implementation of WRS in Tanzania. Although TWLB is run as a public institution, the board members include private sector representatives from the processing, marketing and financing segments of the commodity chain, thus the implementation of WRS was carried out taking account of private sector's view. This well-established legal and policy framework contributed to the progress shown in the WRS experience in Tanzania.

(2) Access to finance for depositors

Under the legal and policy frameworks of the authorities, banks recognize warehouse receipts as a valid financial instrument, and increasingly provide financial services to WRS users. It also expands the business opportunities for financial service providers, and banks are even encouraged to set and meet targets on warehouse receipt financing.

(3) Involvement of development partners

From the initial stage of the WRS development in Tanzania, the Government of Tanzania involved various development partners such as CFC, IFAD and AfDB. Other development partners such as USAID, EU and DFID also financially supported the WRS development in Tanzania. Their projects were implemented by both international and local organizations such as RUDI, AMIS international Agriculture Consulting and TechnoServe who filled knowledge, managerial and technical gaps in operation of WRS, which was new to the country through supporting the following key activities:

- Sensitization of rice farmers, village leaders and local governments on WRS;
- Capacity building for better warehouse management – training, information sharing;
- Linking financial institutions, SACCOs, buyers and warehouse operators;
- Close monitoring of warehouse operations

(4) Complementarity by various stakeholders in WRS operation

Several government and non-government organizations have led to implementation of WRS in Tanzania. While the Government has engaged in creating policy regulations, developing infrastructure (warehouses) and capacity building, development partners and non-government organizations are actively engaged in sensitization of farmers, village association leaders and local governments on the advantages of warehouse receipt system, as well as technical backstopping. Also private operators manage warehouses and financial institutions play their roles in the financing function of the WRS. Thus various stakeholders play their roles and make complementary contributions to WRS operations in Tanzania.

8.4 Challenges in the Implementation of WRS

As described in the previous section, WRS in Tanzania has already shown some positive progress. It is, however, important to note that the operation of WRS in Tanzania is still far from an optimal level and scale and thus needs to address the following issues to have greater impacts:

(1) Insufficient quality infrastructure

WRS requires more warehouses of sufficient quality for expansion and increased impacts. For instance, although the national rice production rose to 1,423,236 tons in 2011, the current storage capacity of warehouses for paddy accounts for less than 1% of total paddy production. A number of warehouses in rural areas are in too poor a condition to be qualified as registered warehouses, thus upgrading and/or rehabilitation of these warehouses is also a critical challenge.

(2) Non-coherent policies

Some policy changes negatively impacted efforts to expand domestic rice production and distribution.¹³² For instance, the government decision to reduce tariffs on imported rice in 2013 led to increased influx of imported rice and a steep decline of rice prices in local markets. This decreased the profit margins of those involved in local rice dealing, which discouraged further expansion or even continuation of their business, given such meagre business prospects. In this circumstance, several smallholder farmers faced default sales of their stored lots by bankers, because of the continued accrual of interest on the loans under the WRS. It is, therefore, important for successful WRS that, in making policy decisions, the government needs to carefully take into account all possible influences on the rice sector, and create the market environment where incentives are adequately provided for increased domestic rice production and trade.

(3) Unavailability of market information

WRS can be brought to scale only if users obtain the maximum benefit from the system itself. This benefit depends on the availability of market information without which the depositor cannot make the correct decision on the sale of his/her produce. The profit (or loss) accruing from storing paddy at warehouses depends on price changes during the storage period, which are difficult to forecast. To minimize this risk, market information that is at least sufficient, timely and accurate should be made available for farmers to make best decisions in the given circumstances (market information often helps increase the possibility of profit making), and WRS should be accompanied by a good market information system. Unfortunately, such a market information system is not available in Tanzania, and this limits the potential of WRS in the country.

(4) Inadequate capacity of stakeholders

Some warehouses are not making sufficient profit due to the lack of managerial and/or financial capacity of the private operators who manage warehouses. In order to fully utilize infrastructural assets (both public and private) in Tanzania, warehouses need to be operated profitably, and thus the capacity of warehouse operators should be further strengthened.

Also, inadequate capacity of some SACCOS with weak leadership and governance is observed by AMSDP, and it affected the trust in WRS by stakeholders.¹³³ The success of WRS operation depends on SACCOS to a great extent, thus the poor governance and capacity of SACCOS are challenges that need to be addressed.

(5) Organization of producers

The advantages of WRS are largely felt by progressive rice farmers, especially in irrigated ecosystems, who are able to set aside 30 or more bags (50 kg each) of paddy from their production.¹³⁴ Smallholder farmers in rainfed and upland environments are, however, not able to see the profitability through individual stocking at WRS. Hence there is a need for smallholders to form groups and engage in collective storage. Yet, the attempts to organize smallholder farmers often face management problems due to failure in reaching a consensus or conforming to their consensus on pooling their production, the payment of fees and timing and volume of sales. These factors create the situation where collective sales by farmers are scarcely practiced as of 2013. The limited organizational abilities of smallholder farmers, thus, remain a major challenge for them to benefit from WRS.

(6) Exit strategy

The achievement of WRS made so far in Tanzania owes much to the significant amount of technical, managerial and material supports from development partners. It is not certain if WRS can function sustainably after the withdrawal of these development partners, thus an exit strategy is necessary while building sufficient capacity of relevant stakeholders.

¹³² This issue was also identified by Coulter, J. in 2009, *Review of Warehouse Receipt System and Inventory Credit Initiatives in Eastern & Southern Africa*, A working document commissioned by UNCTAD, under the All ACP Agricultural Commodities Programme (AAACP), pp29

¹³³ Matabe, L., 2010, *Case Study Report on Warehouse Receipt System Under AMSDP, Tanzania*

¹³⁴ Information obtained from RUDI staff by author

8.5 Scalability Assessment

Utilizing the Scaling-up Framing Questions developed by IFAD in collaboration with the Brookings Institution, the scalability of WRS to other CARD member countries was assessed as shown in Table 8.2.

Table 8.2: Scalability Assessment

Framing Questions		
Ideas	What is the intervention to be scaled-up?	Paddy marketing through warehouse receipt system
	Whose idea?	The underlying principles of lending against stored commodities date back to ancient times (first written records found in Mesopotamia). The first legal and regulatory system was introduced in the U.S. in 1913, with the first warehousing law having made it possible for warehouse receipt finance to be generalized and expanded, and today warehouse receipt financing is used in many countries in the world. ¹³⁵
	Has it been tested/ piloted?	Yes, with significant impacts (still limited though)
Vision	What could be the appropriate scale of the intervention?	The scale would depend on the intensiveness and the degree of market orientation agriculture in replicating countries; Introduction of WRS requires a minimum of three tons storage capacity at each warehouse.
Drivers	What or who are the drivers for the scaling-up process ahead? (including local leaders or champions, external catalysts and incentives)	<p>Leadership – Local administration/governments</p> <p>External Champions/Catalysts – IFAD, CFC, USAID, DFID, AGRA and other advocates of market-oriented rice farming.</p> <p>Market – Increased demand for rice in most African countries could be a driving force for more efficient marketing systems. Increased imported rice prices would also support expansion of local production.</p> <p>Incentives – Favourable prices farmers could obtain through better marketing, and better access to credit against the stored paddy lots in the warehouses</p>
Spaces	Fiscal/Financial	<p>Financial capacity of the government (if the public sector is to invest in construction and/or rehabilitation of warehouses) or private sector (if warehouses are to be constructed or rehabilitated by the private sector) is prerequisite to scaling-up this model. If both public and private sectors lack financing capacity, this space might be created in partnership with development partners.</p> <p>The recognition of benefits of WRS business, and the interest of private financial institutions in participating in WRS business are other prerequisites because their involvement in financing services is indispensable for sustainable operation of WRS.</p>
	Natural Resource/ environmental	In terms of environment, a prerequisite condition for scaling WRS is the high rice production potential of the target areas so that a sufficient amount of surplus rice is produced. The higher the agricultural potential, the higher the possibility of WRS' success and its impacts on farmers' livelihoods.

¹³⁵ FAO Investment Center, 2009, *The use of warehouse receipt finance in agriculture in transition countries*, the Working Paper presented at the World Grain Forum 2009, available at <http://www.fao.org/3/a-i3339e.pdf>

Framing Questions		
Spaces	Policy	<p>In the policy dimension, getting WRS to scale calls for a well-established legal framework governing the operation and management of warehouses, and policy coherence created through a set of well-coordinated policies that promotes the production increase and improved marketing and postharvest of paddy.</p> <p>These would include policies in the areas of trading taxation and public budget allocation.</p>
	Capacity	<p>Prerequisite capacities of the country to adopt WRS include availability of warehouse infrastructure in rice-producing areas, warehouse operation and management capacities amongst private operators, and farmers' organizational capacities if collective storage is expected. This space could be created through public-private partnerships and/or technical and financial supports by development partners.</p>
	Market	<p>Successful adoption of WRS requires good access to transport infrastructure and markets, since the WRS operation can be profitable only in well-connected areas. WRS works better (or at least more cost efficiently) in the areas where commercial and intensive rice production prevails.</p> <p>Sufficient market demand for domestic rice is another prerequisite for scaling WRS for rice, since the increased amount of rice traded through WRS should be absorbed in either domestic or international markets.</p>
	Political	<p>Most African countries face inefficient marketing, seasonal financing gaps, high transaction costs in rice trading, limited storage capacity of rice producers, and therefore the scaling-up of WRS could obtain political support in most CARD member countries. However, priority should be put on domestic production of rice, for having political space for the introduction of WRS.</p> <p>It is important to note that the introduction of WRS is likely to be prevented if political persons (politicians or local leaders) are involved in the rice trading business in the respective areas, and are making profit unfairly.</p>
	Cultural	<p>The culture of contract conformity and measures for contract enforcement are indispensable for introduction of WRS.</p> <p>Trust and collaborative working relationships among rice producers are necessary particularly when collective storage and collective bargaining are expected.</p>
	Partnership	<p>Partnership space for the WRS introduction exists with traders, warehouse operators and rice producers since WRS can benefit all stakeholders involved in rice trading in the areas where functional commodity exchange is absent.</p> <p>The partnership space also exists with development partners since the potential of WRS to address marketing, financing and postharvest issues in Africa is widely recognized among the development partners.</p>

Framing Questions		
Pathways	What are the pathways for scaling-up in other countries?	Pilot warehouses in irrigated and intensive production areas → Monitoring → Assessment of marketing practices → Experience from other successful countries → Scaling-up
	What is the time frame for pathways to extend?	Three years or longer, depending on the capacities of actors along the rice value chain in target countries, and the level of responsiveness of the country system to the policy, legal and regulatory changes that WRS requires for its functioning.
	How do the drivers and spaces define these pathways?	Policies on bank lending, legal and institutional framework, licensing of warehouse activities, farm gate prices, subsidies are, for example, all elements that directly impact on the pathways to choose in a given context. The experience in Tanzania provides good implications for building and adapting the model to other country circumstances.
	Bottlenecks for scaling and risk mitigation.	Transparency in paddy pricing, wild fluctuations in market prices and non-coherence in national and regional policies on rice import and trade are major bottlenecks. They can be addressed through effective coordination among key stakeholders

8.6 Conclusions

WRS has the potential to improve rice marketing in African countries where stakeholders face problems of seasonal financing gaps, limited storage capacity, uncertainty in the quality of traded commodities and high post-harvest losses. Successful WRS can help rice farmers store and sell paddy at a more favourable time, benefit traders with quality assurance, reduce post-harvest loss and transaction costs, and provide additional business opportunities to financial institutions, all of which could contribute to national food security and rice sector development. WRS for paddy generally works better in the places where farmers grow rice as a cash crop in highly productive irrigated ecosystems, and have excess production that they intend to sell. Farmers will find WRS helps them to tide over unfavourable fluctuations in market prices. WRS could also benefit smallholders in rainfed and irrigated rice production environments, if farmers organize themselves for collective storage and marketing through WRS. Thus, WRS could become an efficient mechanism by which farmers can hedge against price volatility without compromising their ability to finance their family and farm needs.

As described in Section 8.4, the WRS operation in Tanzania still faces a number of challenges and is not as yet operating at its optimal potential or scale. Being at early stages still, it is premature to evaluate the effectiveness of WRS in Africa at this point in time. Various factors still make it uncertain to conclude if WRS provides an optimal marketing and storage solution to farmers in African contexts, especially in rice. Therefore, the WRS experience for rice in Tanzania cannot be simply regarded as a successful model, and at any rate these challenges need to be properly addressed for larger impacts in Tanzania. Nonetheless, the initial impacts experienced in Tanzania showed the large potential contribution of WRS to better marketing in Africa. For this reason, the Tanzanian model of WRS was included in this collection of best practices and analyzed for its scalability to other countries in order to extract lessons and implications from the model.

This case study shows that adoption of WRS requires a well-established legal and policy framework that enables the setting up and operation of warehouse infrastructures in rice producing areas, which are well connected with markets and have a high agricultural potential. It also showed the importance of building public-private partnerships in the establishment, operation and maintenance of warehouses and the better market information system that can support WRS.

Other prerequisites for the introduction of WRS include the cooperation from local financial institutions. Benefits of WRS need to be strongly recognized by them so that they accept warehouse receipts as collateral for loans.

Case 9:

Integration of the National Rice Development Strategy (NRDS) into the Agriculture Sector Development Strategy Investment Plan (DSIP) in Uganda

<i>Basic Information of the Model</i>	
Country	The Republic of Uganda
Area of Intervention in value chain	Policy formulation
Mode of Intervention	Technical assistance and facilitation support
Implementer	Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)
Partner Organization(s)/Institution(s)	CARD Secretariat

9.1 National Rice Development Strategy in Uganda

(1) NRDS in Uganda and its position in the overall development framework

Uganda's National Rice Development Strategy (NRDS) aims to raise the country's paddy production from 177,000 tons in 2008 to 680,000 tons by 2018 in order to achieve rice self-sufficiency as well as substantial poverty reduction and household food security. The NRDS formulation process started in Uganda soon after the country joined the CARD initiative in 2008. Similarly to other CARD member countries, the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) plays the leading role in both formulation and implementation of NRDS. Although its official launch took place only in 2012, the NRDS was already operational in 2009 as the Government had begun its implementation straight after its formulation.¹³⁶

The Ugandan NRDS is consistent with the overall development framework of the country. Its objectives and targets are in perfect line with Uganda's National Development Plan (NDP; 2010/11–14/15), which is the medium term framework for the country's poverty reduction strategy. NDP emphasizes agriculture as a primary engine for the country's economic growth and also offers a variety of investment options for paddy cultivation.¹³⁷ NRDS is also aligned with the country's overarching aspiration to become a modern and prosperous country by 2040.¹³⁸ Towards this end, NRDS is well positioned in the Agriculture Sector Development Strategy Investment Plan (DSIP) of Uganda,¹³⁹ forming a core part of the implementation framework for the development of the rice value-chain.¹⁴⁰ NRDS and its concept notes for future investments are also mainstreamed in the rice part of the Framework Implementation Plan (FIP), which is the action plan for the prioritized sub-sectors in DSIP. Thus, NRDS is well integrated into the overarching framework for economic growth and agriculture development in Uganda.

(2) NRDS implementation structure

The NRDS implementation in Uganda relies on an institutional framework composed of three key units, namely the Rice Steering Committee (RSC), the Rice Industry Secretariat (RIS), and the Rice Technical Committee (RTC). These units were established in 2008 and have been functional to date. Each unit contributes to NRDS implementation through respective functions as described in Figure 9.1, and composes firm implementation structure. Figure 9.1 also shows how each unit relates to others in implementation of NRDS and rice related programmes.

¹³⁶ Although NRDS was formulated in 2009, its official launch had to wait for verification and clarification on data from MAAIF and the Uganda Bureau of Statistics. These were completed in 2012 at the occasion of the World Food Day attended by the Vice President.

¹³⁷ National Planning Authority, 2010, National Development Plan (2010/11 – 2014/15)

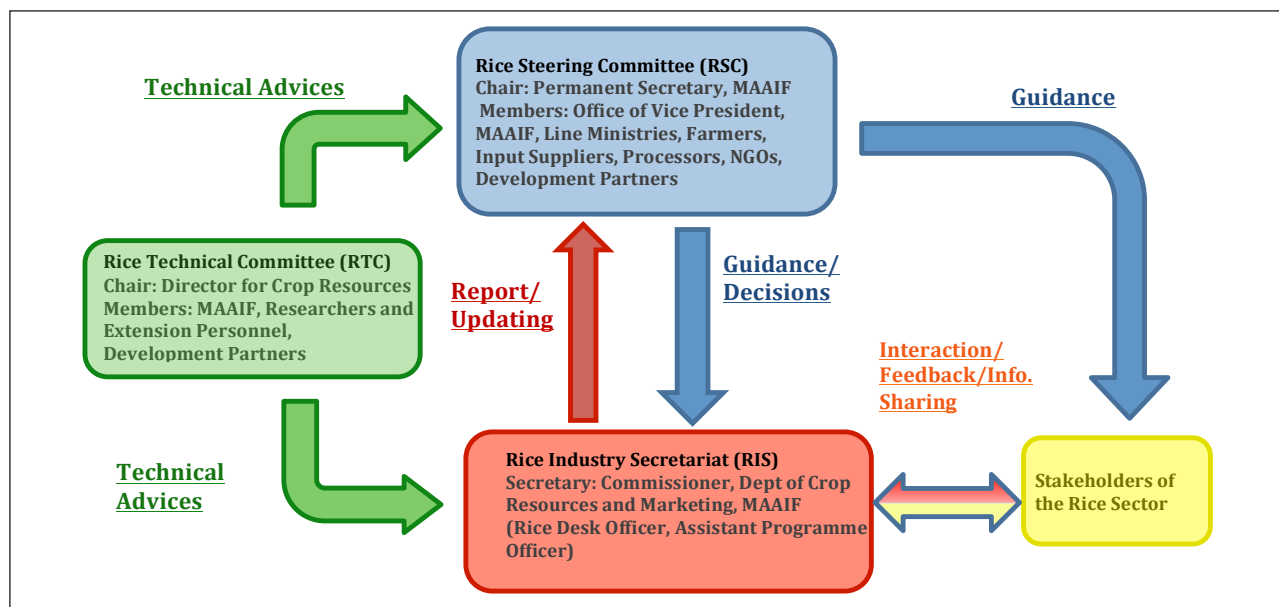
¹³⁸ National Planning Authority, 2007, *Uganda Vision 2040*

¹³⁹ DSIP is the investment framework under Comprehensive African Agriculture Development Programme (CAADP), thus regarded as the CAADP investment plan for Uganda.

¹⁴⁰ DSIP has identified 13 strategic commodities and a value-chain framework implementation plan for each commodity was formulated. Rice is given the 4th top priority, and NRDS and its concept notes are included in DSIP as an implementation framework for rice value-chain development.

- (i) **Rice Steering Committee**
RSC is chaired by the Permanent Secretary of MAAIF and provides guidance on NRDS implementation by setting overall directions and priorities and making decisions relating to the general course of actions under NRDS. RSC is composed of representatives from relevant stakeholders such as the Office of the Vice President, MAAIF, relevant line ministries, national research and extension organizations, rice producers, input suppliers, processors, and development partners.
- (ii) **Rice Industry Secretariat**
RIS serves as a secretariat for the NRDS implementation. RIS is also referred to as “Rice Desk” and is located within the Department of Crop Production and Marketing at MAAIF. RIS plays a pivotal role in handling day-to-day NRDS related activities such as interaction with stakeholders of the rice sector, information collection and sharing, preparation and updating of supply gap analysis, as well as preparation and marketing of project proposals. RIS reports to RSC on the progress of the NRDS implementation, the collected information and recent developments in the rice sector.
- (iii) **Rice Technical Committee**
RTC is headed by the Director of Crop Resources in MAAIF. RTC is in charge of providing technical backstopping to both RSC and RIS in assessing the issues and opportunities along the rice value chain. RTC is also in charge of providing technical advice and recommendations, as well as preparing analytical papers on technical issues on demand.

Figure 9.1: Implementation structure of NRDS in Uganda

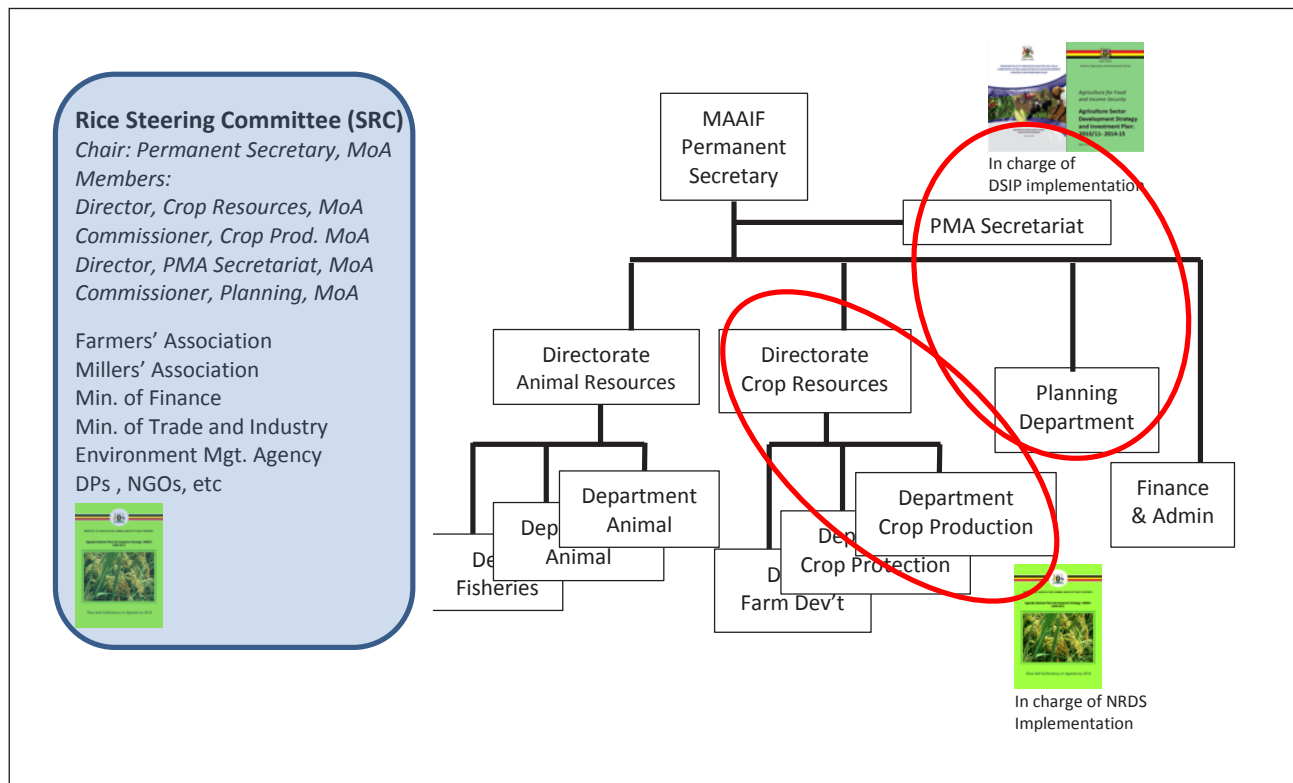


The NRDS implementation structure is well embedded within the existing organizational framework of MAAIF (Figure 9.2). As a result, it did not require any institutional restructuring when it was set up. The members and chairpersons of the three key units are high-rank officials of MAAIF and can influence the decision making process of the ministry. Also the chairmanship of the MAAIF Permanent Secretary in RSC and the membership of RSC enable good coordination of NRDS implementation with the Agriculture Planning Department (APD) of MAAIF as well as the Plan for Modernization of Agriculture (PMA) Secretariat, both of which are in charge of the DSIP implementation and this automatically anchors NRDS therein.

This structure has provided the rice sector development process in Uganda not only with a clear and strong legal and policy framework but also the political support it requires. An example of the political supports is the approval of FIP for rice by the Ugandan Parliament and subsequently the Ministry of Finance. FIP includes the NRDS concept notes as plans for future investment, and has widened the scope and the opportunities for mobilizing both internal and external financial resources for rice sector development. As a result the World Bank, for instance, decided to include rice as one of the four target commodities in its Agriculture Cluster Development Project in Uganda¹⁴¹ and aim to increase the production and productivity of rice through irrigation and Infrastructure development, access to inputs, market linkages and stakeholder coordination.

141 World Bank, 2013, *Project Information Document* PIDC1075

Figure 9.2: Structure for NRDS development and Implementation in MAAIF



9.2 Process of the NRDS Integration into DSIP

(1) Background

Historically in the Ugandan society, rice had not been regarded as important either as a food crop or a cash crop, and was given low policy priority by the Government. The rice sector, like in many other African countries, started, however, to receive increasing attention from the late 1990s due to rapidly increasing demand¹⁴² triggered by urbanization and economic growth. As a result, rice has gained economic significance in Uganda since 2000, and it is against this backdrop that the Ugandan vice president of that time, H.E. Dr. Gilbert Bukunya, identified upland rice as a major strategic intervention crop for food security and poverty reduction, which subsequently led to the Upland Rice Project in 2004 launched by the President of Uganda, H.E. Mr. Yoweri Museveni. As these experiences show, the Government of Uganda cast the light on rice, and made significant efforts to boost rice production to meet increasing demand. Together with the supports from development partners such as JICA, these efforts enhanced rapid adoption of NERICA varieties and subsequent increase in rice production,^{143, 144} as shown in Case 1 of this publication.

(2) Formulation of NRDS and integration into DSIP

Uganda joined the CARD initiative in 2008 and the process of NRDS formulation started with the support of the CARD secretariat. As mentioned earlier, NRDS informally entered into effect in 2009 even though the document was officially launched in 2012.

At the mid-way point of NRDS formulation, the formulation process of DSIP commenced in 2009. In drafting DSIP at the time, an APD technical team that was in charge of leading the DSIP formulation conducted a series of participatory consultations with various stakeholders in the rice sector. Consultation sessions revealed the lessons learnt from the experiences in the promotion of agriculture development in the past, and led to MAAIF's decision

¹⁴² The rice demand in Uganda increased at an average rate of approximately 9.5% from 1990 to 2006. *Value Chain Study in Achuli and Lango sub-regions*, The Plan for Modernization of Agriculture Secretariat, 2009

¹⁴³ Kijima Y and Sserunkuuma D, 2013, "The adoption of NERICA rice varieties at the initial stage of the diffusion process in Uganda", *AfJARE* 8(1)

¹⁴⁴ Kijima Y, Sserunkuuma D, Otsuka K, 2006, "How revolutionary is the 'NERICA revolution'? Evidence from Uganda", *The Developing Economies* XLIV-2: pp252-267

to adopt a commodity-based approach based on selected priority commodities as a key strategy to the designing and implementation of DSIP. Rice was not initially among the selected priority commodities listed in the first draft of DSIP because the increasing contribution of rice to Ugandan economy and food security was not well recognized by the government officials at that time.¹⁴⁵ During the review process, however, the Parliamentary Committee on Agriculture made reference to the NRDS draft and the rice boom perceived by farmers, politicians and the public at large. Some parliament members were aware of the usefulness of NRDS as well as its development and implementation process and, above all, its impacts, as updated and reported by the MAAIF officers from time to time. On this basis, they insisted the inclusion of rice as one of the priority commodities under DSIP. This became the 'turning point' that firmly set off the process of integration of NRDS into DSIP.

Taking on this political message, the APD technical team reviewed the draft NRDS and its development process and found two facts especially remarkable. Firstly it found that the NRDS draft had quite a logical and comprehensive structure as a commodity-based development strategy based on extensive information on the rice sector and offered in-depth analysis. Secondly, it found that the process and tools used for NRDS development such as the resource gap analysis and the prioritization of investments for the resource allocation were practical and applicable to the designing of DSIP which envisages implementation of commodity-based sub-programmes through (i) establishment of intervention plans and performance; (ii) commissioning relevant studies and reviews; (iii) public sector support; and (iv) private sector leverage fund.

Actually, each of these components of DSIP was fed by the outputs of the working weeks for NRDS development and implementation that were conducted by the CARD secretariat. At the same time, the resource gap analyses and prioritization exercise carried out by the Ugandan NRDS taskforce was used as the basis for the identification of those areas where public and private sector supports are needed.

Finally, the concept notes developed by the NRDS task force to address issues in prioritized areas became the FIP for the rice sub-sector under DSIP, thus completing the integration of NRDS into DSIP, with the strategic principle of NRDS being reflected in DSIP.

It is important to note that some of the DSIP drafting team members were also represented in RIS and other units constituting the NRDS implementation structure. This made the osmosis of rice and NRDS in the Government relatively easy and contributed to the high status of rice, and subsequently NRDS within DSIP.

Due to the successful process followed for rice through NRDS formulation and implementation, rice became the flagship of the commodity-based approach in DSIP and a role model for other prioritized agriculture commodities. MAAIF plans to apply the implementation structure of NRDS such as RIS/Rice Desk as well as tools and the process used for the NRDS development to other priority commodities.

9.3 Analysis of the Success Factors

Several factors contributed to successful integration of NRDS into DSIP, making rice a key strategic commodity for the economic growth and food security in Uganda. These success factors include the following:

(1) A favourable market environment for rice

Steadily increasing demand for rice and the higher profitability of its farming in comparison with other food crops definitely helped draw attention from the Government (both policy makers and MAAIF).¹⁴⁶ The increasing importance of rice in the Ugandan economy and food security was recognized also by the public, and created an ambient where the exclusion of rice from the government policies and strategies could not be justified or accepted any longer.

¹⁴⁵ At the stage of drafting DSIP, rice was initially not given even 10th priority as a strategic commodity in the DSIP scoring matrix.

¹⁴⁶ When the market price of maize plunged in the region during the early 2000s, the Government and farmers were desperate for an alternative crop that could provide food security and income. This created a readiness amongst upland farmers to try rice as a potential alternative.

(2) Political support to the rice sector in general and to NRDS in particular

Rice sector development in Uganda had been receiving strong political support since the early 2000s. As mentioned in Case 1, former Vice President, H.E. Dr. Gilbert Bukenya himself, had started a home-grown initiative on upland rice in 2003, followed by the Upland Rice Project launched by President Yoweri Museveni in 2004.

When it came to the NRDS formulation, ideas and data contained therein were channelled instrumentally to political leaders to help them make policy decisions on rice sector development. This was done through occasional dialogues between MAAIF and Parliamentarians, and as a result, the technical messages of NRDS were clearly signalled to policy makers, and NRDS gained its credibility among them.

For this reason, during the DSIP draft strategy review, the Parliamentary Committee on Agriculture strongly insisted on including rice as one of the key strategic commodities on which DSIP would focus.

(3) Remarkably boosted rice production

Besides development partners' assistance, it was the intense political attention that caused rice production to boom, particularly that of upland rice in Uganda in the 2000s, which contributed to greater food security and a reduction in rice imports. For instance, the increase in local production helped save the country about USD 30 million in foreign exchange earnings between 2005 and 2008.¹⁴⁷ This success attracted further attention from policy makers and the general public, which contributed to shifting the position of rice among the government priorities in a short period of time and specifically from the 14th place in 2010, to the 10th place in 2012 and 4th place in 2013.

(4) Adoption of commodity-based approach

Based on past experiences in agriculture development, the Government of Uganda adopted a commodity-based approach to focus its development efforts on key strategic commodities for the DSIP implementation. This proved advantageous for the integration of NRDS (commodity-focused development strategy on rice) into DSIP, because rice and NRDS could easily fit in the DSIP framework without causing any confusion or inconsistency in its structure.¹⁴⁸

(5) Strong implementation structure established for NRDS

The institutional set up established for NRDS implementation enhanced the integration of NRDS into DSIP and provided a strong base to pursue rice-related development objectives. Further, it showed the usefulness of the NRDS implementation structure to relevant stakeholders within MAAIF, demonstrating how a commodity-based approach could be managed within the DSIP implementation and worked as a model for other priority crops:

- With the Permanent Secretary of MAAIF chairing RSC, the NRDS implementation is led by strong leadership. This also helped mainstreaming rice in DSIP.
- The three units established for NRDS implementation (RSC, RIS and RTC) were put in place within the existing organizational structure of MAAIF. This enabled the coordination, information exchange, decision making and operation in a commodity-focused manner without disturbing the ministry's thematic-based structure (e.g. Planning, Crop Resources, Animal Resources)
- The NRDS formulation and implementation have involved not only the Department of Crop Production, but also APD and the PMA Secretariat, which are in charge of DSIP as well as overseeing the development of the whole agriculture sector. Some officers from APD and the PMA secretariat, therefore, had already recognized the usefulness of NRDS at the time of DSIP formulation, and lessons from NRDS were incorporated into DSIP. In addition, some members of RSC (e.g. the Permanent Secretary) also served as technical advisors for drafting DSIP, thus enabling the integration of NRDS into DSIP, and proper positioning of rice and NRDS in DSIP.

¹⁴⁷ Mohapatra, 2013, "Uganda: blazing a trail to rice success", *Rice Today* 12(2) pp16-17, IRRI

¹⁴⁸ It is usually difficult to single out commodities in the strategy documents that are structured based on thematic sub-sector (e.g. Research, Extension, Production, Irrigation)

(6) Value addition of NRDS to DSIP

Along the course of processes, stakeholders involved in the DSIP formulation recognized the value added by NRDS as follows:

- The NRDS development process provided abundant information on the sector and clear strategic and technical messages. These were based on comprehensive information collection, in-depth analyses and thorough discussions on issues. Since the NRDS process started ahead of DSIP, the NRDS draft could provide a good base for strategizing rice sector development at the time of drafting of DSIP, which was not the case for other commodities.
- The NRDS preparation process provided good lessons relevant to the adoption of a commodity-based approach. It also worked as a model for the preparation of strategies related to the promotion of other commodities. As a result, rice became a flagship commodity and reference point for the other priority commodities in DSIP. In fact, teams in charge of other commodities invited the RIS officers to their meetings in order to learn from experiences with rice.¹⁴⁹
- The positive performance of the NRDS implementation structure proved to MAAIF staff concerned with the other priority commodities that effective and functional management of the commodity-based approach was possible due to the way RSC provides coordination function for rice stakeholders based on the analytical works, while RIS plays a pivotal role in information collection and sharing through frequent update of situation/gap analyses. MAAIF officers involved in the DSIP formulation noticed that the same institutional setup could also be established for other commodities.
- The contemporaneous processes of the drafting of DSIP and the finalization of NRDS facilitated emergence of synergies and sharing of information.

9.4 Remaining Challenges in NRDS Implementation

Successful integration of NRDS into the country's overarching development framework alone does not necessarily guarantee success in the NRDS implementation. Uganda still faces the following challenges in the implementation of NRDS and continuous efforts need to be made by all relevant stakeholders for the greater impact of NRDS:

(1) Data collection and dissemination

The lack of methodical surveys for crop assessment, record keeping and statistical analyses affects the quality, consistency and availability of data on the rice value chain. Reliable statistics are vital in tracking both the progress of implementation and the impact of investments in the rice sub-sector. RIS has begun to increase its coordination with the Uganda Bureau of Statistics and other international agencies such as USAID and FAO for improving the synchronization of available data.

(2) Lack of capacities

The capacity of the MAAIF technical departments as well as RIS is still insufficient to manage the implementation of a number of projects simultaneously. As the interest of development partners in rice sector increases, the number of rice-related projects is likely to increase. Therefore, the operational capacity of MAAIF needs to be strengthened. In addition, this inadequate technical capacity of public institutions slows down the implementation of planned investments in areas such as irrigation, engineering, research and extension. The recent increase in donors' interest in such areas could be channelled to help build the necessary operational and technical capacity of public sector.

(3) Coordination among programmes/projects

There is still room to improve coordination of rice-related activities, especially with development partners. Despite the strong implementation structure for NRDS, the coordination among related programmes and projects is becoming more difficult as the number of rice-related projects increases. For instance, development partners are applying different extension methods that cause confusion among extension workers and farmers on the ground.

¹⁴⁹ It was mentioned by the officers from the Directorate of Crop Resources, MAAIF, in the interview by the author

(4) Weak linkages with local governments

Integrated development of the rice value chain requires good coordination between the various layers of the administration, which is not happening in all districts. An improved coordination is now being sought through the alignment of district government budget allocation to prioritize investments in the rice sub-sector.

9.5 Conclusions

Rice is now recognized as one of the Uganda's strategic commodities that will help achieve national objectives for economic development and poverty reduction. Given its importance, rice is prioritized in the government development strategies through the integration process of NRDS and its concept notes into DSIP and FIP.

Successful integration was made possible by the various factors such as favourable market conditions for rice farming, strong political supports, success in expansion of rice cultivation, a strong NRDS implementation structure which was well embedded within the national administration as well as the recognition by stakeholders of the usefulness of NRDS experience for the DSIP formulation and implementation. Despite some remaining challenges, the integration of NRDS into DSIP definitely helps in accelerating its implementation through widening the scope for increased investment in the rice sub-sector.

NRDS has also helped uplift the status of rice in the government priority, despite its historically low status in Ugandan society, through demonstrating the effectiveness of a commodity-based approach as a role model. This experience provides lessons to other CARD member countries where traditionally rice has not been prioritized on how NRDS can help mainstream rice in the countries' development agendas through promotion of the commodity-based approach.

CASE 10:

Integration of the National Rice Development Strategy (NRDS) into the Overarching Development Framework in the Republic of Guinea

Basic Information of the Model	
Country	The Republic of Guinea
Area of Intervention in value chain	Policy formulation
Mode of Intervention	Technical assistance and facilitation support
Implementer	Ministry of Agriculture (MINAGRI)
Partner Organization(s)/Institution(s)	CARD Secretariat

10.1 Position of NRDS in the overarching framework in the Republic of Guinea

Rice is the main staple food for Guineans whose annual per capita consumption is nearly 100 kg, which represents approximately 60-70% of total cereal consumption.¹⁵⁰ Rice also provides livelihood to 57% of the rural population with 80% of the economically active population engaged in it. Finally, the contribution of rice cultivation to GDP was 5.2% in 2000 and forecasted to increase to 6.2% by 2018,¹⁵¹ while the whole agriculture-related industry (production, processing, and marketing) accounts for less than 20% of GDP.¹⁵²

Given its importance in the country's economy and food security, rice is at the centre of Guinea's main national strategies for agricultural development and poverty reduction. Specifically, the Government aims at reducing its poverty rate by 30% by 2020¹⁵³ mainly through agricultural development and, in particular, through the implementation of the National Programme for Agricultural Investment and Food Security (PNIASA – *Programme Nationale d'Investissement Agricole et de Sécurité Alimentaire*)

PNIASA, equivalent to the CAADP Investment Plan of Guinea, was developed in 2011 for the period from 2012 to 2016 and has six strategic objectives to be achieved through the implementation of six sub-programmes. The first (Programme 1) is on rice, showing the PNIASA's top priority on this commodity.

Prior to PNIASA, the Government of Guinea had two main strategic documents guiding its agricultural development efforts: the National Agricultural Development Policy Vision 2015 (PNDA 2015 – *Politique Nationale de Développement Agricole*) covering the whole sector development,¹⁵⁴ and the National Rice Development Strategy (NRDS) focusing particularly on the rice sector. PNIASA was conceived to integrate both of them within a programmatic investment framework for the whole agriculture sector.

Even though NRDS is a separate and independent document from PNIASA, the NRDS and the Programme 1 of PNIASA are identical in terms of approaches, components and implementation structure, as a result of efforts of the Ministry of Agriculture (MINAGRI) to align them to ensure their consistency. Table 10.1 depicts the outcome of alignment efforts, showing that each of the four components in the PNIASA Programme 1 corresponds to the priorities identified in the NRDS process as concept notes.

In addition, MINAGRI charged the same team with the responsibility for following up the implementation of both the PNIASA Programme 1 and NRDS.

NRDS is also consistent with the ECOWAS Common Agricultural Policy (ECOWAP), which is the regional CAADP policy framework for Western Africa in terms of its goal, targets and approaches.

¹⁵⁰ Ministry of Agriculture and Livestock, 2009, *Agricultural Statistics*

¹⁵¹ Ministry of Agriculture and Livestock, 2009, *NRDS Guinea*

¹⁵² World Bank, Guinea Overview, <http://www.worldbank.org/en/country/guinea/overview>

¹⁵³ Source: PNIASA, Chapter. 4: *Justification du plan*. Ministère de l'Agriculture, July 2012

¹⁵⁴ PNDA was elaborated and launched in 2007

Table 10.1: Alignment of sub-programmes in P1 of PNIASA and projects prioritized in NRDS

Sub-Programmes of PNIASA Programme 1 (Sustainable Rice Development Programme)	Sub-sectors prioritized in the NRDS concept notes
P1.1 Promoting irrigation and improved water management	Irrigation development and water management
P1.2 Improving access to agricultural inputs and equipment	Fertilizers and pesticides
	Seeds
P1.3 Improved support for agricultural research and advisory services	Capacity Development
P1.4 Development of infrastructure to improve access to agricultural markets	Improving access and market infrastructure
	Promotion of agricultural mechanization

10.2 Development of Rice-Related Strategies in Guinea

(1) Development process of NRDS

NRDS in Guinea was formulated in 2009. The process was led by the Ministry of Agriculture and Livestock (MAE – *Ministère de l'Agriculture et de l'Élevage*)¹⁵⁵, particularly the Office of Strategy and Development (BSD – *Bureau de Stratégie et de Développement*) under the supervision of the MAE Secretary General. A task force was formed for the formulation, implementation and monitoring of NRDS, comprising executives from BSD, the National Directorate of Agriculture (DNA – *Direction Nationale de l'Agriculture*), the Guinea Institute of Agronomy Research (IRAG – *Institut de Recherche Agronomique de Guinée*), the National Agency for Agricultural Promotion and Advice (ANPROCA – *Agence Nationale de Promotion et de Conseil Agricole*), the National Directorate of Rural Engineering (DNGR – *Direction Nationale du Génie Rural*), and the National Directorate for Rural Roads (DNPR – *Direction Nationale des Pistes Rurales*). The national NRDS/CARD focal point for Guinea was a senior official from BSD specialized in rice, and heavily involved in the implementation of all national strategies, including PNDA.

The task force took a participatory process through which the views from various stakeholders both within and outside the Ministry were taken into account in information collection, situation analysis, response formulation and target setting.

In 2009, the process was completed and NRDS was officially launched covering the whole rice value chain from research, inputs, infrastructure, production, extension, post-harvest, processing to marketing, and its impact is estimated to reach into various dimensions, such as GDP growth, employment, and poverty alleviation.¹⁵⁶ The strategy development was followed by the preparation of concept notes, which included the priorities for future interventions in the rice sector. The tools used for this purpose were donor mapping, needs mapping, gap analysis and prioritization similarly to other CARD member countries.

(2) Development process of the CAADP Investment Plan for Guinea (PNIASA)

PNIASA is basically the upgraded version of the National Agriculture Investment Programme (PNIA – *Programme National d'Investissement Agricole*) which was prepared in 2008 as an agriculture sector investment plan and included the Sustainable Rice Development Programme (*Programme de développement durable de la riziculture*) as its first component.¹⁵⁷ PNIA was amended after the Government of Guinea signed the CAADP compact in April 2010 in order to integrate the compact's agreement in its contents. Based on the independent technical review provided by FAO, the African Union and NPCA (NEPAD's Planning and Coordination Agency), PNIA was upgraded to PNIASA for intense coordination and exchanges with on-going programmes aiming at food safety, management

¹⁵⁵ MAE was split into MINAGRI and the Ministry of Livestock later during the structural reform in 2010.

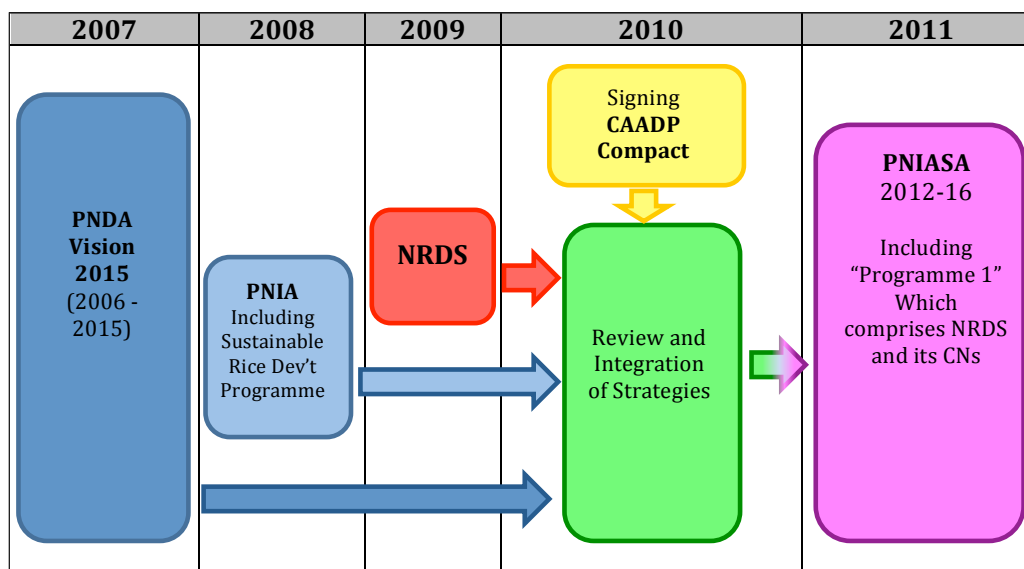
¹⁵⁶ Ministry of Agriculture and Livestock, 2009, *NRDS Guinea*

¹⁵⁷ The Programme was drafted by a team of BSD officials under the leadership of the BSD Director, and the composition of the team was different from that of the NRDS Task Force. The other four components of PNIA are: Diversification programme for food security (*Programme de diversification pour la sécurité alimentaire*), Agriculture export and agri-business promotion programme (*Programme de promotion des exportations agricoles et de l'agro-business*), Programme for integrated natural resource management (*Programme de gestion intégrée des ressources naturelles*), and Strengthening institution, coordination and implementation of PNIA (*Renforcement institutionnel et de coordination de la mise en œuvre du PNIA*)

and prevention of food crises and improving nutrition. Developed under the auspices of the National Guidance Committee,¹⁵⁸ the formulation process of PNIASA was supervised by the National Steering Committee,¹⁵⁹ while its implementation became the responsibility of the Technical Consultative Committee.¹⁶⁰ While their membership varied, all these committees were chaired by officials from MINAGRI.¹⁶¹

The Figure 10.1 shows the sequence of events related to development and integrations of agriculture-related strategies.

Figure 10.1: Development of agriculture-related strategies



[Source]: Prepared by the author

10.3 Process of NRDS Integration into PNIASA

As described in the previous section, CAADP process in Guinea started with drafting of PNIA in 2008, and it was upgraded to PNIASA in 2011. Since NRDS was formulated in 2009, the sequence of events for the formulation of these documents was in the following order: drafting PNIA, NRDS formulation, and PNIASA formulation.

For the revision of PNIA into PNIASA, the editorial team was formed to work on Programme 1, which is the rice component of the PNIASA, and the team reviewed the Sustainable Rice Development Programme, the first component of PNIA as well as NRDS. Since the editorial team for both PNIASA and NRDS comprised almost the same members, and the quality of NRDS and its concept notes was widely recognized as a result of the participatory process in its formulation, the editorial team decided to ensure consistency between the Programme 1 of PNIASA and NRDS in order for PNIASA to be built on outcomes of the NRDS process. Thus PNIASA adopted priority NRDS concept notes for designing its rice component, the Programme 1, and this is how the high level of consistency between the two documents was made possible.

158 This committee (in French, *Comité National d'Orientation*) is composed of the Ministers from the Ministry of Agriculture (MINAGRI), the Ministry of Livestock, the Ministry of Fisheries and the Ministry of Environment and a representative from civil society.

159 The NPC (in French, *National Pilotage Comité*) comprised the secretary generals from the four ministries mentioned above, and representatives from civil society and the private sector.

160 This committee (in French, *Comité Technique de Concertation*) is composed of the directors of BSD from the four ministries mentioned above and directors from the Ministries in charge of international cooperation and coordination with development partners.

161 In particular, the chairperson of the Technical Consultative Committee is the BSD director of MINAGRI who was also the national CAADP focal point.

It is also noteworthy that the BSD director of MINAGRI was a CAADP Focal Point in Guinea, and he played a critical role in the NRDS integration into PNIASA. Since he has a responsibility to ensure the alignment of all activities under PNIASA and he was also confident in NRDS process, he made presentations on the effective consultative approach taken in the process of NRDS formulation and the quality of NRDS at the regional workshops for the PNIASA formulation process. His work received full support from the President of the Republic and the Secretary General of MINAGRI as well as development partners such as UNDP, FAO, IFAD, JICA, the World Bank and the EU.

As a result of all those factors, National Steering Committee members of PNIASA and the members of the editorial team were all convinced, thus the Programme 1 of PNIASA was structured with four specific objectives, under each of which a sub-programme is designed for implementation, and these specific objectives are in line with priorities suggested by NRDS concept notes, as shown above in Table 10.1.

10.4 Success Factors for the Integration

The following are the key success factors for the NRDS integration into PNIASA:

(1) NRDS and PNIASA formulation led by the BSD director

The BSD director played significant roles in NRDS integration into PNIASA. Closely supervising the CARD focal point in Guinea, he has deep understanding on the process and outcome of NRDS. Meanwhile, he is the CAADP focal point for Guinea thus responsible for overall supervision of all programmes under MINAGRI. Under his strong leadership and close supervision, the integration process was smoothly carried out by the NRDS/CARD focal point of that time.

In addition, the BSD director was trusted by all high rank officials within MINAGRI, and appreciated for both his competence and capacity. This made him a strong champion in terms of any rice development efforts in MINAGRI, including integration of NRDS into PNIASA.

(2) Formulation process of two documents involving the same group of officers

The formulation of NRDS and PNIASA was led by the BSD director, and a number of officers were also involved in the formulation process of both documents. The alignment of two documents, therefore, took place naturally among the teams and the integration of the NRDS results into PNIASA was smoothly carried out.

(3) Existence of champions because of the importance of rice

Rice was widely recognized as an important commodity for the food security and economic growth of the country, and therefore it was not difficult to find national champions. The rice sector, and subsequently NRDS, the Programme 1 of PNIASA and their integration, received strong support from the highest decision makers in MINAGRI such as the Minister and the Secretary General. For the same reason, a number of multilateral and bilateral financial partners also became champions and contributed to the formulation process of NRDS and its integration into PNIASA through provision of technical inputs.

(4) Good timing of NRDS and PNIASA formulation

There was good timing of the processes of formulation of NRDS and PNIASA, which intertwined with each other very favourably in 2010. PNIASA could count on solid analyses and recommendations prepared for NRDS before drafting started for the upgrade of the Sustainable Rice Development Programme of PNIA into the Programme 1 of PNIASA. The sequence of relevant events was ideal for smooth integration.

5) Value addition by NRDS

NRDS was formulated in a consultative and participatory manner, involving wider stakeholders in discussions. This NRDS approach resulted not only in enhanced contributions by wider stakeholders to its outputs, but also the high recognition by them of the NRDS quality and results. With this wide recognition of NRDS, stakeholders supported the full utilization of NRDS and its concept notes in the formulation of PNIASA.

10.5 Conclusions

It is clear that the Guinea experience is a good example in terms of NRDS integration into a country's overall development framework and in its agricultural development strategy in particular. This case provides implications on what conditions and factors can enhance the process of NRDS integration into an overarching development framework. Factors that contributed to such achievement related to important roles played by the key players (the BSD director in this case), the institutional framework established for the formulation, implementation and monitoring of the NRDS (involvement of the same group of people in formulation of both NRDS and the CAADP investment plan), the broad recognition of the importance of rice in the economy and food security influencing the emergence of champions as well as the good quality of the NRDS in terms of both formulation process adopted and the strategic direction it provides.

Also, the good timing factor should not be neglected as the NRDS formulation came prior to the PNIASA formulation, allowing the PNIASA to make full use of NRDS and integrate it smoothly.

MINAGRI still faces some challenges in the implementation of PNIASA. Insufficient financial resources have, for instance, been mobilized so far, thus the impacts of PNIASA are still limited. It is also necessary to strengthen the coordination among six PNIASA sub-programmes, which are supposed to complement each other for greater impacts. These challenges show that integration of NRDS into an overarching programme does not always promise successful NRDS implementation. Nonetheless, it is clear that the successful integration of NRDS into PNIASA enabled streamlining of the efforts made for rice sector development in the country thereby helping their implementation and ultimately their impact.

Annex

SCALING-UP FRAMING QUESTIONS



IDEAS

1. What is the intervention that is to be scaled up? Is it a new idea (innovation) or an idea adopted and adapted from prior practice elsewhere?
2. Whose idea is it?
3. Has it been tested/piloted/evaluated?



VISION

4. What is the appropriate ultimate scale of the intervention which the IFAD project or program supports in country X? I.e., how many people, households, districts, etc. could and should ultimately be reached, not merely by IFAD's own program and also by others (government, IFIs, etc.)?



DRIVERS

5. What or who are the drivers that are pushing, or are expected to push, the scaling up process ahead? Including local leaders or champions, external catalysts and incentives? (see Box 1)
What is IFAD doing to develop and support these drivers?



SPACES

6. Space has to exist or be created so the intervention can grow to achieve the desired scale. What are the government and IFAD doing to ascertain or help create this space in its multiple dimensions? (see Box 2)



PATHWAYS

7. What are the pathways that define the way interventions in country X are (to be) scaled up with IFAD support, moving from idea/innovation to learning to scaling up? (see Box 3)
8. What is the time horizon over which the pathways are expected to extend?
9. How do the drivers and spaces define these pathways?
10. What are the most serious likely obstacles and risks, and what can be done to mitigate them?



IFAD's Role

11. What is IFAD's specific role in promoting the scaling up process?
12. How do IFAD's policies, procedures and resources support the implementation of the scaling up process?

BOX1

Drivers of scaling up

A few key factors drive forward the process of scaling up:
Ideas, Vision, Leadership: Need to recognize that scaling up of a (new) idea is necessary, desirable, feasible. Successful scaling up is usually driven by champions.
External Catalysts: Political or economic crisis, pressure from outside actors (donors, EU, etc.)
Incentives: These include rewards for actors and institutions, competitions, accountability through the political process, peer and other evaluations, etc. Incentives are key to drive behavior of actors and institutions towards scaling-up; requires accountability.
 Source: Adapted from Hartmann and Linn, 2008

BOX2

Spaces for scaling up

If scaling up is to succeed, space has to be created for the initiative to grow. The most important spaces are:
Fiscal/financial space: Fiscal and financial resources need to be mobilized to support the scaled up intervention; and/or the costs of the intervention need to be adapted to fit into the available fiscal/financial space.

Natural resource/environmental space: The impact of the intervention on natural resources and the environment must be considered, harmful effects mitigated or beneficial impacts promoted.

Policy space: The policy (and legal) framework has to allow or needs to be adapted to support scaling up.

Institutional/organizational/staff capacity space: The institutional and organizational capacity has to be created to carry the scaling-up process forward.

Political space: Important stakeholders, both those in support and those against, the intervention need to attend to through outreach and suitable safeguards to ensure the political support for a scaled up intervention.

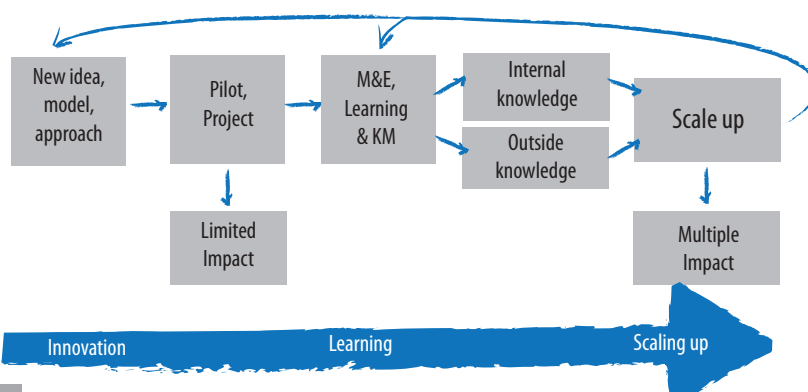
Cultural space: Possible cultural obstacles or support mechanisms need to be identified and the intervention suitably adapted to permit scaling up in a culturally diverse environment.

Partnership space: Partners need to be mobilized to join in the effort of scaling up.

Learning space: Knowledge about what works and doesn't work in scaling up needs to be harnessed through monitoring and evaluation, knowledge sharing and training.
 Source: Adapted from Hartmann and Linn, 2008

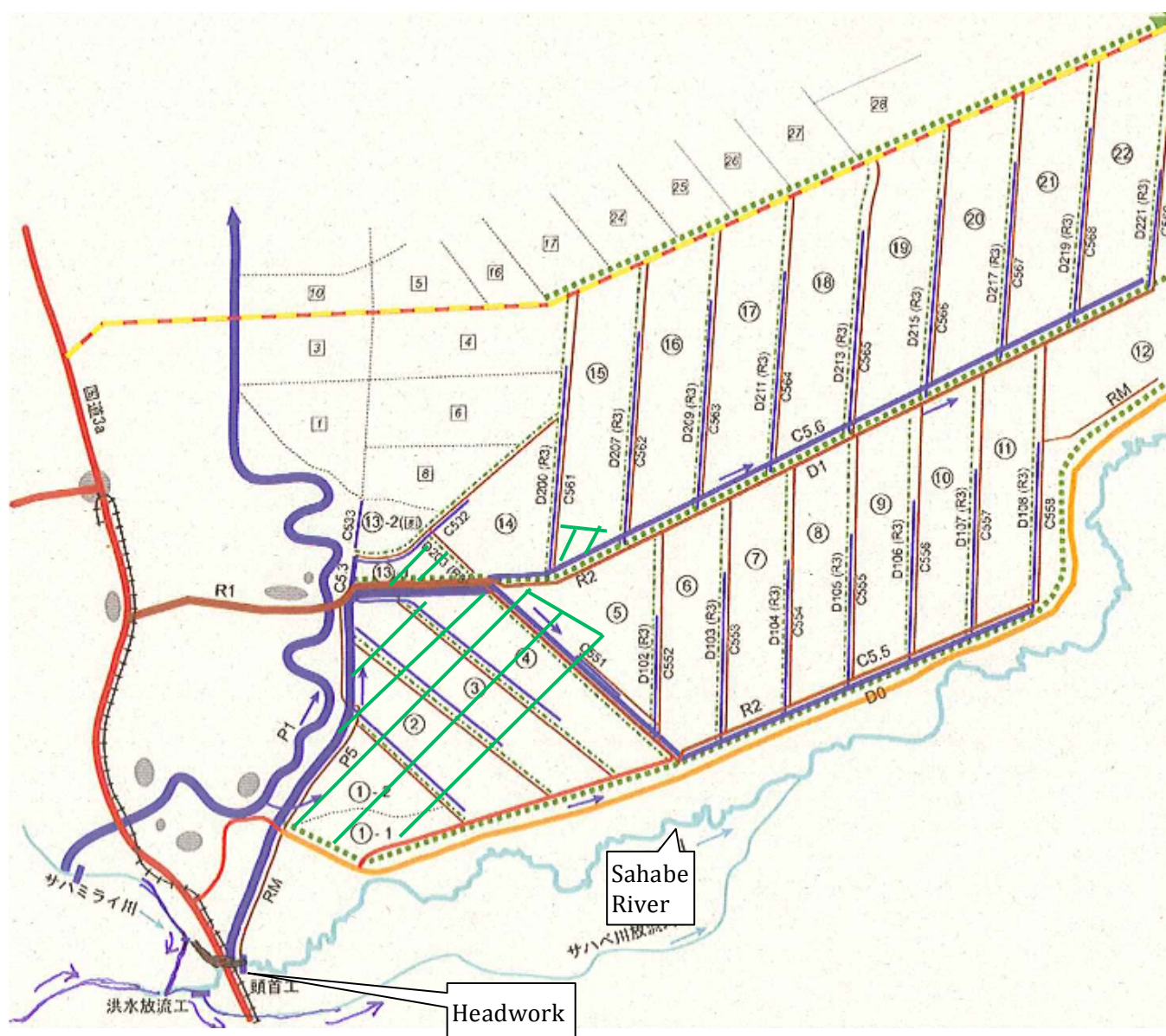
BOX3

Innovation, learning and scaling up linkages



Annex 2: Change in the Rice Cultivation Area in PC-23 From 2010 to 2012

Figure 4.1: Cultivated Area before 2010 (areas in green): estimate based on interviews with farmers



Source: the PAPRIZ project

Figure 4.2: Cultivated Area in 2010-2011 Season (areas in green): estimate based on interviews with farmers

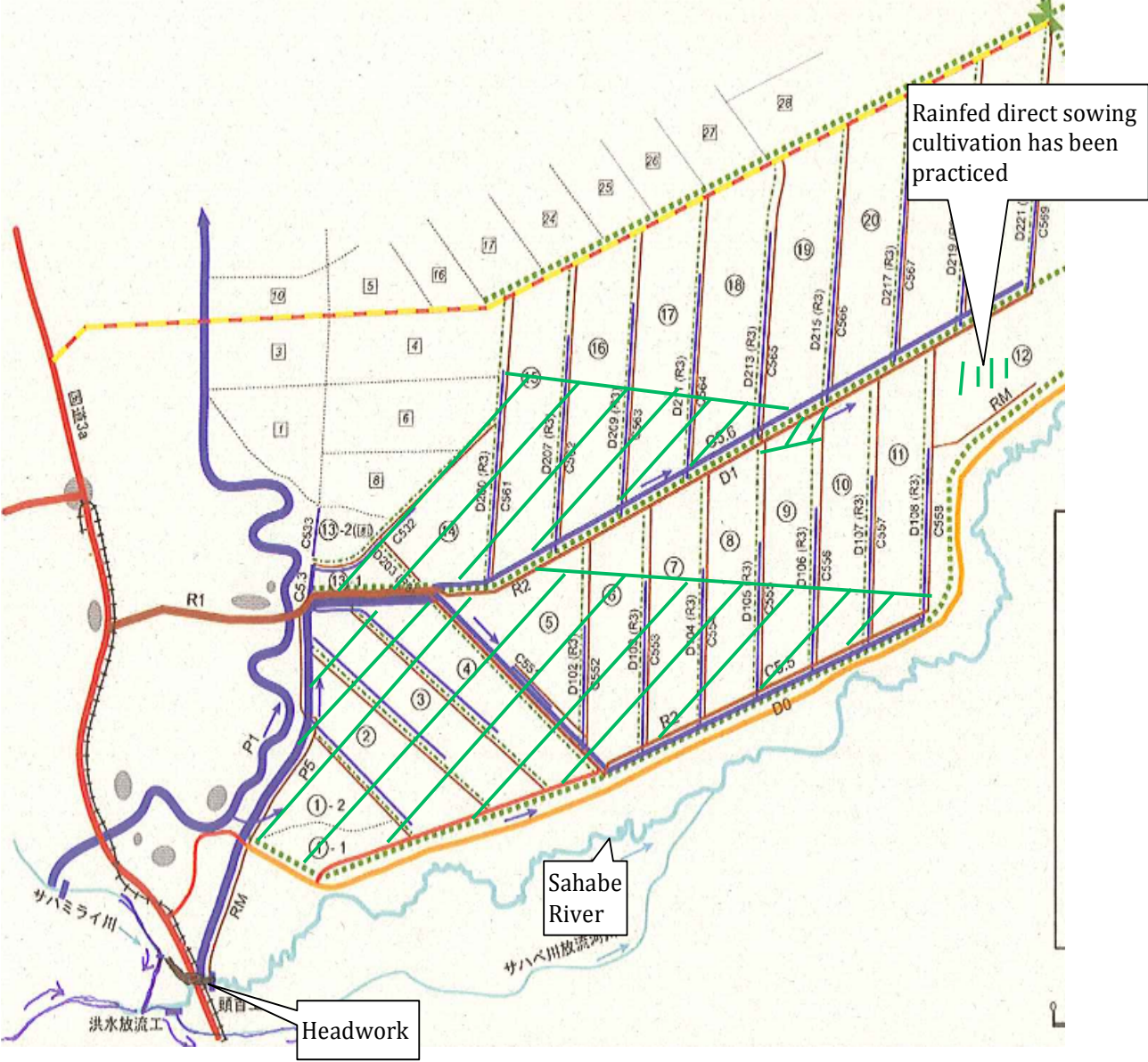
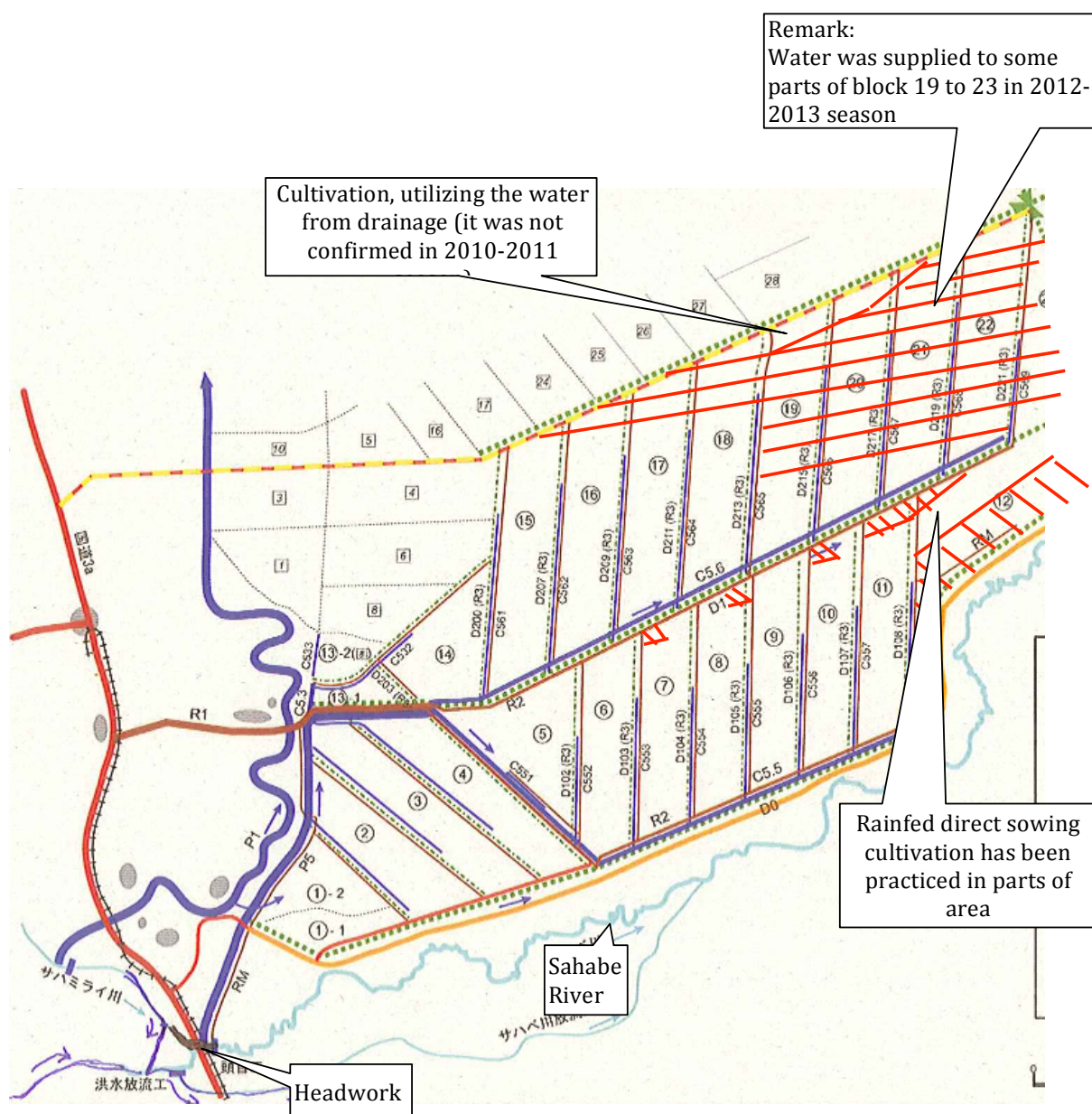


Figure 4.3: Cultivated Area in 2011-2012 Season (areas in red were UNCULTIVATED): estimate based on observation





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