



**Farming for Impact –  
A Case Study of Smallholder  
Agriculture in Rwanda**

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Front cover: Izina Ry'ubaza, 44,  
Huye, Rwanda.  
(Mike Goldwater / Concern Worldwide)

This page: People bring their goods  
to Bushoka village market, Kivuruga  
sector, Gakenke district of Northern  
Rwanda

## Executive summary

This case study demonstrates that with targeted support and favourable policy conditions, resource-poor farmers can increase their productivity and contribute to hunger and poverty reduction goals. Findings indicate that the Government of Rwanda (GoR) has invested in smallholder farming and as a result, agricultural productivity and output has increased in the country. These increases have partially insulated Rwanda from food price spikes in East Africa and led to general food availability increasing in the country

Based on a policy review and an analysis of the outcomes from the Concern Worldwide Rwanda livelihoods programme, this study demonstrates that productivity gains can be achieved amongst resource-poor farmers with the smallest plots of land. Identified promising practice to support this group includes an integrated package of interventions, which facilitated access to inputs as well as savings and loans, field demonstrations and one-to-one visits, a participatory cattle distribution scheme, and pre-cooperatives that have provided financial and psychological-social support.

This study demonstrates the impact of this support to resource-poor and vulnerable smallholder farmers. Outcome indicators included: increased agricultural productivity and crop diversity; indications of improved food security as participants consumed a greater amount of and more diverse food; wealth creation and improved resilience to external shocks through increased savings and building assets, as well as improved feelings of self-confidence and friendship.

These findings can inform the wider policy context. Firstly, they illustrate that with targeted support, resource-poor smallholder farmers can contribute to food security and poverty reduction goals. Secondly, the study suggests that governments and donors should incorporate resource-poor smallholder farmers into strategies that aim to reduce poverty and hunger, in particular through approaches that cut across sectors and combine agricultural, institutional and social support.

**“The Government of Rwanda has a strong commitment to smallholder farming.”**

## Introduction

International donors and civil society organisations have praised the Government of Rwanda (GoR) for overcoming a number of complex challenges on the road to post-conflict recovery and economic growth following genocide in the country during 1994. Many analysts note that strong economic performance, an enviable record on corruption and strides towards post-conflict reconciliation make Rwanda a success-story within the international development context.

Economically, Rwanda represents one of the best performing countries in East Africa, with economic growth rates of between 3 – 11 percent from 2000-2010.<sup>1</sup> Analysts estimate growth rates of 7 percent for 2011 and a predicted increase of 6.8 percent for 2012.<sup>2</sup> The World Bank notes that careful economic management by the Government has led to a strong fiscal position, stable inflation rates and an increasingly positive environment for private sector investment in the country, despite the global economic downturn.<sup>3</sup>

Smallholder agriculture has played an integral role in Rwanda's economic performance. The GoR has invested significantly in the sector over the past decade, and placed small-scale farmers at the centre of its agriculture policy. The Government has steadily increased the budgetary allocation to agriculture, from 4.2 percent of the national budget in 2008, to nearly ten percent in 2010/11.<sup>4</sup> Yields have improved significantly and 'production has exceeded consumption for the last three years, for the first time since 1994.<sup>5</sup> Partly as a result, Rwanda has insulated itself from significant food price increases in East Africa.<sup>6</sup>

While progress has been notable, a number of challenges remain. Poverty levels have reduced in the country since 1994; however, the rate has remained high in recent years. The GoR illustrates that extreme poverty rates reduced rapidly from 77 percent of the population in 1995, to 60.4 percent in 2001, although this has remained at 56.9 percent of the population in 2006.<sup>7</sup> Government ministries have also noted that income inequality has also increased markedly in the country, and represents one of the most pronounced in East Africa.<sup>8</sup>

Furthermore, improving the livelihoods of resource-poor farmers with the smallest parcels of land remains a challenge for policy-makers and practitioners in Rwanda, as it does in many other countries. Poverty and food insecurity remain concentrated in rural areas among low-income agriculturalists (particularly female-headed households), those who work on other people's farms (agro-labourers) and marginal livelihood groups.<sup>9</sup> Such challenges point to the need for targeted interventions that can improve productivity for resource-poor farmers and improve food security.

### *What does this study aim to do?*

This case study, developed in collaboration between Concern Worldwide and the Natural Resources Institute, University of Greenwich, aims to illustrate promising practices to support smallholder farmers in increasing their productivity and the impact of that support. This case study uses Rwanda as an example, due to strong governmental support to smallholder agriculture in addition to a livelihoods programme that Concern Worldwide staff identified as illustrating agricultural productivity gains.

The specific objectives of this study are as follows:

- Explore the outputs and outcomes from the Concern Worldwide Rwanda livelihood security programme, with particular focus on agricultural production activities and interventions
- Illustrate the 'promising practices' that the GoR and development partners can promote in support of resource-poor farmers and vulnerable households to improve agricultural productivity and household food security outcomes
- Based on the learning from these interventions, provide recommendations to scale-up the positive impact of GoR and donor agricultural policies and programmes within the current policy framework

**“Economically, Rwanda represents one of the best performing countries in East Africa.”**

1 International Monetary Fund, World Economic Outlook, Washington D.C.: IMF, 2011

2 Ibid

3 World Bank, Rwanda Economic Outlook: Seeds of Change, Kigali: World Bank, 2011

4 Ibid

5 International Monetary Fund (IMF) and MINECOFIN, Poverty Reduction Strategy Paper – Progress Report, IMF: Washington D.C, 2011, p. 36

6 Ibid, p.36

7 Government of Rwanda, Economic Development and Poverty Reduction Strategy, Kigali: Government of Rwanda, 2007, p.13

8 Ministry of Local Government (MINALOC), National Social Protection Strategy, Kigali: Government of Rwanda, January 2011, p.11

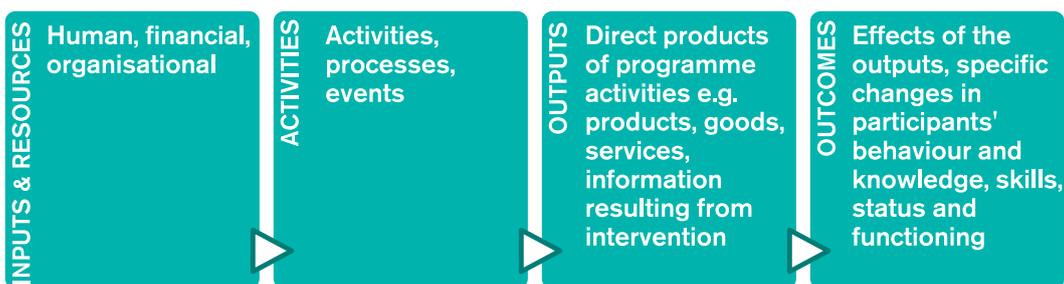
9 Ibid

## Methodology

The research team designed this study with the use of the impact chain framework. The framework was used as a conceptual tool to examine implementation of and results from interventions to improve agricultural production outcomes for resource-poor smallholder farmers. A sample of non-project participants was used as a control group to compare differences in related outcomes between Concern Worldwide Rwanda programme participants and non-participants.

The framework allows analysis of data against inputs and resources, activities, outputs and wider outcomes. The diagram below outlines this approach.

**Figure 1. Impact Chain Methodology**



## Data collection and analysis

The method was mixed – comparative and contextual – taking into account differences in the level of analysis (household, community and wider environment) and dimensions of lives. The study established differences in perceptions, experiences and outcomes for different farmers.



The methodology consists of five main components:

- 1) A literature and data review
- 2) Key informant interviews with national stakeholders
- 3) Key informant interviews with local authorities
- 4) In-depth interviews with smallholder farmers
- 5) Partner Impact Pathways Reflection Workshop.

A purposive sampling method was used to select three administrative sectors and three cells within these sectors in the Concern Worldwide areas of operation (Gakenke, Huye and Nyaruguru). Researchers selected households randomly in the three case study areas. In total, 50 programme participants and 20 non-participants interviews were held in total amongst the three districts. The interview was based on a semi-structured interview questionnaire.

Comprehensive notes or transcripts were taken for each discussion. Participant statements were recorded through an interpreter. Quantitative information was analysed using the Statistical Package for the Social Sciences (SPSS). Researchers used the t-test and the Mann-Whitney test to test levels of significance.<sup>10</sup>

### Limitations

This study has some limitations. Firstly, due to the limited amount of time for fieldwork, the sample size is relatively small (70 interviewees), particularly for non-participants in the Concern Worldwide Rwanda programme.

Secondly, as a piece of qualitative research, the study does not include quantitative data on yield increases or agricultural production per hectare. However, the case study supplements existing data undertaken in a mid-term assessment in November 2007, which is available online.<sup>11</sup>

Thirdly, matching the situations of programme participants and non-programme participants in before and after scenarios to compare differences in outcomes gained in the last three to four years relies on several assumptions. However, the questionnaire design and complementary methods (such as key informant interviews; partner discussion of impact pathways) were intended to help with broader contextualisation of the observed changes and issues of attribution.

**Figure 2. Map of Rwanda**



10 The t-test and Mann-Whitney test are statistical hypothesis tests used to identify the likelihoods of a result occurring due to chance.

11 [www.concern.net/resources](http://www.concern.net/resources)

## Agriculture and food security in Rwanda

### Context and environment

Smallholder agriculture represents the key livelihood activity for the majority of the Rwandan population, and is a significant driver for economic growth in the country. Agriculture occupies 79.8 percent of the labour force and crops such as tea and coffee account for 70-90 percent of total export revenues.<sup>12</sup> The World Bank estimates that the sector contributes around 36 percent of overall GDP in the country.<sup>13</sup>

Marshlands and steeply sloping hills with highly cultivated terraces characterise the topography in Rwanda. 60 percent of landholdings are under 0.7 hectares in size, with 50 percent less than 0.5 hectares and 25 percent less than 0.2 hectares.<sup>14</sup> Over 70 percent of the land in the country is under agricultural use and the Ministry of Agriculture and Animal Resources (MINAGRI) note that 'land is exploited to the limits of agricultural possibilities and often beyond.'<sup>15</sup>

The sector remains largely subsistence in nature, with 90 percent of output being food crops, with 66 percent of this production consumed in the household.<sup>16</sup> Statistics produced by the GoR suggest that the most widely grown food crops include beans, bananas, sorghum, Irish potatoes, cassava and maize.<sup>17</sup>

Agricultural producers face a large number of both human and environmental challenges in Rwanda. Small land holdings and population pressures represent a serious challenge to agricultural cultivation. The National Institute of Statistics of Rwanda (NISR) predicts that the Rwandan population will grow to over 10.7 million people in 2011<sup>18</sup> against a land size of 26,336 km sq, resulting in a high population density of over 400 people per km sq.<sup>19</sup>

Furthermore, due to its sloping land, the country traditionally experiences soil erosion and degradation of soil quality. A UN Food and Agriculture Organisation (FAO) study in 2006 noted that the country faces 'moderate to severe' soil erosion on 50 percent of its land surface.<sup>20</sup> MINAGRI has attempted to address this problem through a programme of soil erosion protection.<sup>21</sup>

Similar to other countries in East Africa, unpredictable rainy seasons, prolonged droughts, flood and landslides create added challenges. Low levels of irrigation coverage result in a reliance on rain-fed agricultural systems. A number of respondents in this study cited unpredictable weather as a major agricultural challenge, in particular through uneven patterns of rainfall.

### Government of Rwanda policy on agriculture and food security

Government of Rwanda policy-makers have identified smallholder-led agriculture as a key sector for growth and poverty reduction in the country. Responding to this aim, the government has steadily increased the budgetary allocation to agriculture, from 4.2 percent of the budget in 2008, to nearly 10 percent in 2011.<sup>22</sup> Illustrating this commitment, the GoR was the first signatory to the Comprehensive Africa Agriculture Development Programme (CAADP) in March 2007.

The Government aims to transform agriculture from subsistence-based farming to a 'productive, high-value, market-orientated' sector through a number of interlinked interventions and policy reforms.<sup>23</sup> These include the intensification of crop production through land use consolidation, the organisation of farmers into cooperatives, and facilitating access to inputs. Other interventions include investment in erosion control measures such as terracing and creating market value chains.

GoR strategy aims to achieve agricultural growth through two sources. Firstly, through exports and 'those which are linked to regional or international export production through commodity chains', and secondly through the national market and 'those which are related to internal market development, essential cereal commodity chains (rice and maize), and milk, meat and vegetable crops.'<sup>24</sup>

**“Smallholder agriculture represents the key livelihood activity for the majority of the Rwandan population.”**

12 World Bank, op cit, 2011 and Ministry of Agriculture and Animal Resources (MINAGRI), Strategic Plan for the Transformation of Agriculture in Rwanda – Phase II (PSTA-II), Kigali: Government of Rwanda, February 2009

13 World Bank, op cit, 2011

14 MINAGRI, PSTA-II, op cit, 2009, p.22

15 Ibid

16 John Rwirahira, Rwanda Agriculture Sector Situational Analysis: An IPAR Sector Review, Kigali: Institute of Policy Analysis and Research, 2009, p.7

17 MINAGRI, PSTA-II, op cit, 2009 and Rwirahira, op cit, 2010 p.7

18 National Institute of Statistics of Rwanda (NISR), Statistical Yearbook, 2011, Kigali: Government of Rwanda, 2011

19 World Bank, op cit, 2011

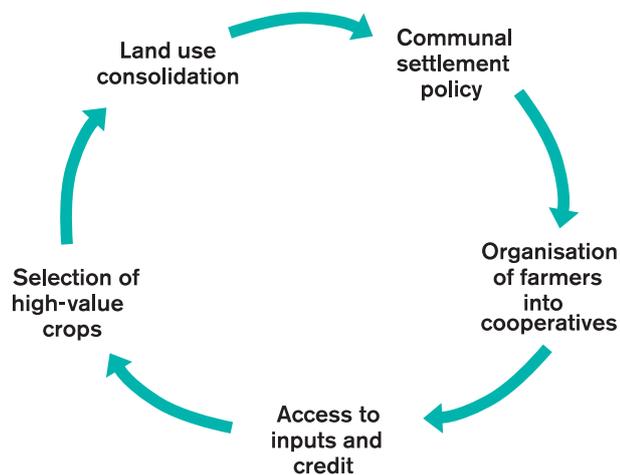
20 Dr Herman Musahara, Improving Land Tenure Security for the Poor in Rwanda, Rome: UN Food and Agriculture Organisation, November 2006

21 Ministry of Agriculture and Animal Resources (MINAGRI), Joint Agriculture Sector Review, Agriculture Sector Performance Report 2009/2010, Kigali: MINAGRI, September 2010

22 World Bank, op cit, 2011

23 MINAGRI, PSTA-II, op cit, 2009

**Figure 3. Indicative illustration of GoR agriculture strategy**



### Specific policies

Two policy frameworks (Vision 2020 and Economic Development and Poverty Reduction Strategy) as well as two implementing documents (the Strategic Plan for the Transformation of Agriculture and Crop Intensification Program) outline the key Government of Rwanda policies to support smallholder farmers in the country.

#### *Vision 2020 (2000) and the Economic Development and Poverty Reduction Strategy (EDPRS): 2007-2012*

The Government of Rwanda has committed to an ambitious framework aimed at increasing economic growth and decreasing poverty through its multi-stakeholder long-term development plan called Vision2020. The framework declares that its central aim remains to 'attain per capita income of a middle-income country in an equitable way, and the aspiration to become a modern, strong and united nation, without discrimination between its citizens'.<sup>25</sup>

The EDPRS further outlines an approach to support private sector development in the economy, coupled with the flagship Vision2020 Umurenge (VUP) programme to 'release the productive capacity of the poor' in rural areas. In this strategy, MINAGRI priorities include increasing access to inputs, soil conservation, and improved access to livestock and extension services. Related policies include reclaiming marshland as well as establishing communal farms to facilitate access to inputs and support services.

#### *Strategic Plan for the Transformation of Agriculture (PSTA II) 2008-2012 and the Crop Intensification Programme (CIP) 2008-2012*

The Strategic Plan for the Transformation of Agriculture (PSTA-II) and Crop Intensification Programme (CIP) outline fully budgeted plans to achieve transformation in the agriculture sector over a five-year period.

The PSTA-II outlines four programme areas for investment: intensification of crop development and sustainable production systems (such as irrigation, training on animal husbandry, increasing the use of seeds and fertilisers); the professionalisation of producers (extension advice, investment in agricultural research); promoting commodity chains and agri-business development (post-harvest handling and processing facilities, rural roads, finance services); and institutional development (M&E systems, management systems and decentralisation).

### Budgeting

The MINAGRI Investment Plan 2009-2012 notes that the identified budget for the PSTA-II agriculture plan totals around US\$815 million for the period of the plan (2009-12).

This budget is outlined below for each programme of the PSTA-II.

<sup>24</sup> MINAGRI, PSTA-II, op cit, 2009

<sup>25</sup> Government of Rwanda, Vision2020, Kigali: Government of Rwanda, 2000

**Table 1. MINAGRI budgetary allowances for the PSTA-II (2009-2012)**

Programme	Identified cost	GoR and DP gap in funding	Private sector gap
<b>Programme one – crop intensification</b>	US\$624,821,658	US\$273,062,818	0
<b>Programme two – professionalisation of producers</b>	US\$41,960,157	US\$14,683,189	0
<b>Programme three - commodity chains and institutional development</b>	US\$127,822,126	US\$23,018,152	US\$55,000,000
<b>Programme four - institutional development</b>	US\$20,831,000	US\$13,568,838	0
<b>Total</b>	<b>US\$815,434,941</b>	<b>US\$324,332,997</b>	<b>US\$55,000,000</b>

Source: MINAGRI, Agriculture Sector Investment Plan, 2009

## Complementary policies

### *National Land Policy*

The National Land Policy (2004) complements GoR agricultural policies by addressing issues related to small land sizes and fragmented land-holdings. The framework aims to consolidate land holdings and increase the average land-holding size as well as provide security of tenure for the population of Rwanda through land titling. Policies to achieve this aim include land registration and titling for over eight million households by 2012, the establishment of a National Land Centre and Land Information System to encourage land use administration and management.

Importantly, the policy states that the Government can take possession of hillside land that is not developed or used economically. It also places marshland in the country under the stewardship of the Ministry of Land and Environment.<sup>26</sup> GoR authorities then allocate the land to farmer cooperatives to cultivate collectively, with support from district authorities.

The Rwandan Human Settlement policy (1996) or imidugudu remains closely linked to the land reform process. This policy aims to move rural households into grouped community settlements to free up land for agricultural production, in part to help re-locate refugees returning to the country following 1994 and to relieve population pressures on land. GoR scaled up this policy in 2009, and complemented it with a policy to 'phase-out' grass-thatched houses of the rural population.<sup>27</sup>

### *Vision2020 Umurenge (VUP) and National Social Protection Strategy*

Alongside agricultural support, the Government of Rwanda aims to support resource-poor farmers in rural areas through the flagship social protection programme Vision 2020 Umurenge (VUP).

Key policies and programmes include a public works programme offering short-term employment on communal projects such as infrastructure development for extremely poor households that have adult labour capacity. Direct support through cash transfers to the non-working poor, and provision of financial services for low-interest loans for identified productive enterprises.

Social protection programmes identified by the GoR in the agriculture sector include the Girinka 'One Cow per Family Programme', which aims to provide poor families with more than 0.7 hectares of land with a cow. The Government aims to provide households with less than 0.7 hectares with small animals such as goats, rabbits and chickens. Policies on subsidised fertiliser inputs and promotion of household gardens aim to support resource-poor smallholder farmers to achieve productivity and household food security goals.

## Recognising the needs of resource-poor smallholder farmers

GoR policy recognises the needs of resource-poor farmers through the above frameworks. It aims to do this through creation of off-farm employment in rural areas and direct support to farmers through training, access to livestock and agricultural inputs. Policy states that 'the benefits for the poor cannot be taken for granted in any

26 Government of Rwanda, National Land Reform, Kigali: Government of Rwanda, 2004

27 Rwanda Governance Advisory Council, Nyakatsi Eradication, an Impressive Demonstration of Government Effectiveness, accessed at: <http://www.rwanda-gac.org/main-menu/research/social-governance/nyakatsi.html>

development programme and it is important to put mechanisms in place for guaranteeing that different categories of farmers, especially the most vulnerable, benefit from the economic growth that is being generated.<sup>28</sup>

Primarily, GoR policies note that through agriculture investment, resource-poor farmers will benefit from the proceeds of growth through off-farm employment. The PSTA-II notes that 'even subsistence farmers benefit from intensification of agriculture through opportunities it creates for them to work on other farms, and in enterprises such as collection centres, packing houses, and processing facilities.' Such off-farm employment 'in turn provides a way to increase their household food security, along with better yields of their own subsistence crops.'<sup>29</sup>

Secondly, GoR notes that resource-poor farmers also benefit from direct support through policies to increase the productivity of crops through land use consolidation, and the provision of inputs such as improved seeds and fertilisers through cooperative groups. The policy notes that the key to poverty reduction is through increasing productivity and competitiveness, and that GoR will initiate interventions 'starting with the intensification of input use, improved use of soil and water resources, and farmer training' to support the sector.<sup>30</sup>

Finally, the national social protection strategy outlines both additional agricultural support to increase productivity for the resource-poor and provide a risk-reduction tool. Initiatives such as the Girinka 'One Cow Per Family' programme and subsidised inputs attempt to further this aim. Policies to encourage household vegetable gardens similarly encourage homestead production to improve food security and nutrition. Overlapping social protection schemes on health, education and public works may further provide support to this group.

## Policy implementation and decentralisation

The Government of Rwanda implements agricultural policies through a decentralised structure, whereby responsibility for the implementation of policy and service provision passes to district and sector authorities in the country. The Decentralisation Policy (2000) and Decentralisation Implementation Plan (2005) outline this structure. MINAGRI provides strategic oversight, coordination and support to this process alongside other Government institutions such as MINECOFINANCE and MINALOC.

Development partners assist GoR efforts to achieve its aims in the agricultural sector. The Aid Coordination Framework (2006) and the Paris Declaration on Aid Effectiveness (2005) outline the framework for this cooperation. Donors provide budget support to sector authorities and directly implement projects that are in-line with government priorities.<sup>31</sup> The MINAGRI investment plan illustrates that donors fund around 45 percent of the identified budget from 2009-12.<sup>32</sup>

To give two examples of relevance to this study, the UK Department for International Development provides budget support to the GoR at national and sector level, and fund a land reform programme, prioritising land titling and registration of 6.9 million land parcels by 2015.<sup>33</sup> The European Union provide budget support at the national level, support decentralised authorities through sector level funding and aim to increase agricultural production through increased access to finance, seeds and fertilisers.<sup>34</sup>

Non-state actors also contribute to the implementation of policy. Non-governmental organisations align programmes directly with GoR priorities in agriculture. The GoR aims to improve private sector involvement in the agriculture sector, in particular through the distribution of inputs and the provision of extension advice. The government has trialled initiatives to promote 'demand driven' services through a voucher scheme, whereby farmers purchase inputs from private sector service providers. However, both MINAGRI and external evaluations note that private sector coverage and engagement in the sector could be improved.<sup>35</sup>

28 MINAGRI, PSTA-II, op cit, 2009, p.19

29 Ibid, p.19

30 Ibid, p.19

31 Donors in the sector include the World Bank, DFID, European Union, USAID, Belgian Development Agency, Japan International Cooperation Agency, International Fund for Agricultural Development and Netherlands Development Cooperation Ministry

32 MINAGRI, Joint Agriculture Sector Review, Agriculture Sector Performance Report 2009/2010, Kigali: MINAGRI, September 2010

33 The DFID budget for Rwanda from 2008-2013 is stated to be £330 million for the period of 2010-2015 (Operational Plan)

34 European Union budgets are stated to be 290 million Euros from 2008-2013 according to the EC Country Strategy Paper (2008)

35 MINAGRI, Joint Agriculture Sector Review, Kigali: Government of Rwanda, April 2011 and IFDC, op cit, 2010, p.35

## Patricia Nakabonye, Mbazi, Huye

Patricia Nakabonye lives in the Mbazi sector of Huye, Southern Rwanda. She is a widow who lost her husband and nine children during the 1994 genocide.

Patricia owns three plots of land, and farms with other vulnerable people in a cooperative established through an initiative by Concern Worldwide and ARDI [Concern's partner] since 2007.

Recounting how the genocide affected her life and livelihood, Patricia says: 'they [genocide perpetrators] came and jumped over the fences and they took us from there. They took us to the tribune, where they had meetings. We were told they were helping us. But they lied to us, they said that some people wanted to kill us and they would try and save us.'

'Lots of people were coming in from different places. The head of the district at that time, told us he was going to get us some food from the city centre, but he was actually bringing people to kill us. I was hit by a panga [machete] and they thought I was dead amongst all the corpses.'

'I came back to my house long after the genocide was over and found it had been destroyed. During the genocide they took everything. They stole all our manure and ate all of our cows. I live here alone, but have been able to survive because of the project.'

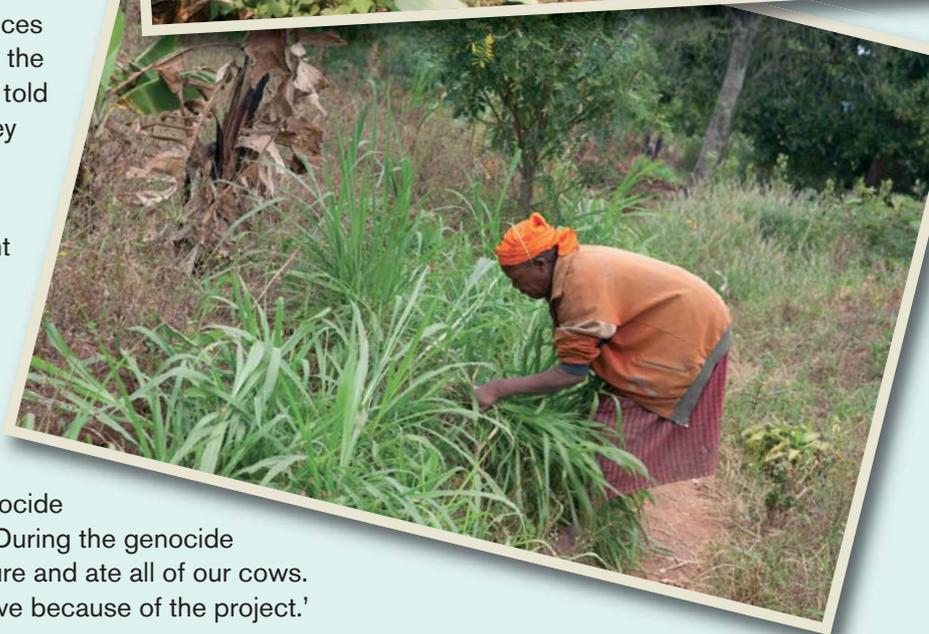
'Since I started receiving support from ARDI I have learnt lots of useful new farming methods and met lots of people in the same situation as me.'

'Before the programme, I was planting but couldn't get a good harvest. Now I have learnt about row planting and using manure on my fields. This means I am able to get a much better yield.'

'I also received cows and goats, which have since given three offspring, two of which I sold. The extra money has allowed me to employ people in the rice fields. I sometimes even pay workers to work on my fields with milk from the cow.'

'I can grow so much more now. Before I used to get 70kg per harvest, now I get more than 200kg. Changes in my farming techniques and farming equipment such as hoes have made a big difference and have really helped increase the amount I am able to grow.'

'ARDI also helped people with the same problems as me. We were able to help each other and discuss things. Through this group we are able to discuss and overcome our fears and start working again.'



**“I have learnt about row planting and using manure on my fields. This means I am able to get a much better yield.”**

## Policy successes and remaining challenges

A literature review and key informant interviews highlight the Government of Rwanda's key achievements in the agriculture sector, and illustrate some remaining challenges to implementing GoR policy aims in the country.

### *Productivity increases for smallholder farmers*

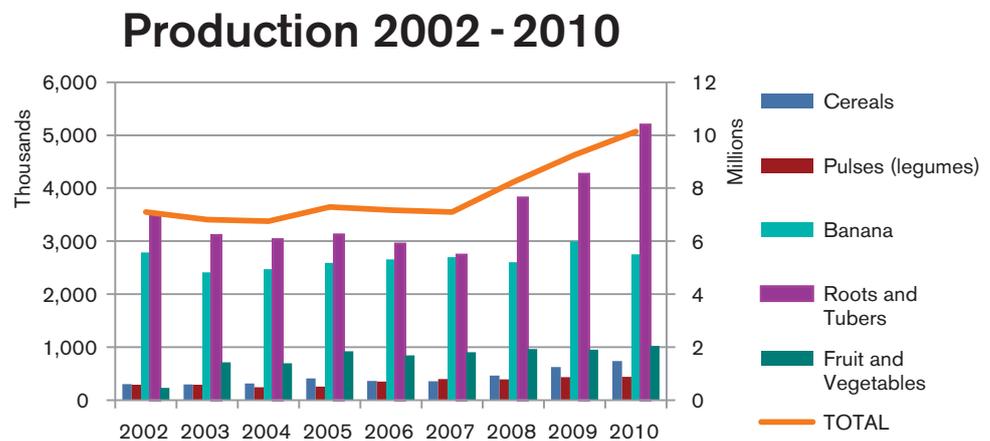
Analysts indicate that on a macro-level, yields for key crops such as maize and wheat in areas of consolidated land have improved markedly in Rwanda since the implementation of the PSTA-II and CIP. The World Bank notes that agricultural productivity has increased in Rwanda over the past five years, and that the production of food crops is likely to have increased by around 15 percent during the period of the EDPRS.<sup>36</sup>

MINAGRI estimates that output for key crops such as maize increased by 322.0 percent between 2007-2010 on areas of consolidated land, with figures of 213.0 percent for wheat and 206.0 percent for cassava.<sup>37</sup> As illustrated below, yields for roots and tubers have also increased substantially. Importantly, farmers recorded these increases through increasing yields, rather than

bringing more agricultural land into use.<sup>38</sup>

Productivity increases have led to a prolonged period of agricultural growth in Rwanda. Output from the agriculture sector has increased at a rate of 4.9 percent per year over the past five years,<sup>39</sup> with a spike of 7.7 percent in 2009 – surpassing other economic sectors in the country. MINAGRI estimates an agricultural growth rate of 8.0 percent in 2010.<sup>40</sup> The World Bank suggests that the 'country is leading compared to other countries with similar GDP shares in agriculture'.<sup>41</sup>

**Figure 4. MINAGRI Production Figures based on Crop Assessment Reports**



Source: MINAGRI, Crop Assessment Report, 2011

The International Monetary Fund states that 'production increases have buffered Rwanda against a global food crisis and the associated rise in food prices in 2008.' It adds that 'thanks to efforts made in crop intensification, production has exceeded consumption for the last three years, and for the first time since 1994.'<sup>42</sup> Minister of Agriculture, Agnes Kalibata, notes that production increases have insulated Rwanda from price rises in East Africa during 2011.<sup>43</sup>

**“Productivity increases have led to a prolonged period of agricultural growth in Rwanda.”**

36 World Bank, op cit, 2011

37 MINAGRI, Joint Agriculture Sector Review, op cit, 2010

38 Ibid

39 World Bank, op cit, 2011, p.11

40 MINAGRI, Joint Agriculture Sector Review, op cit, 2010

41 World Bank, op cit, 2011

42 International Monetary Fund (IMF) and MINECOFIN, Poverty Reduction Strategy Paper – Progress Report, IMF: Washington D.C, 2011. See also World Bank, Food Price Watch 2011, Washington D.C.: World Bank, February 2011

43 UN Radio, Good Practices Protect Rwanda from Food Price Spikes, IMF Podcast, 4 May 2011

## General food availability

Increases in agricultural productivity have led to increased food availability in the country – one proxy indicator for overall food security.

Estimates suggest that average calorie availability for the population has increased from around 1800kcal/person/day in 2004 to over 2500kcal/person/day in 2010, exceeding World Health Organisation health guidelines.<sup>44</sup> Similarly, availability of proteins has also increased from 37 to 46/person/day from 2004-2009, while lipid availability has also increased from 7 to 21g/person/day.<sup>45</sup>

Rwanda has made slow but significant progress in tackling under-nutrition and malnutrition rates. The Global Hunger Index shows that the number of undernourished people in the country dropped from 38 percent in 2000-2 to 34 percent in 2005-7, and the number of children undernourished dropped from 20.3 percent to 18.0 percent in the same period.<sup>46</sup> A multi-agency food security and nutrition survey considered that 4 percent of households had poor food consumption scores and 17 percent were borderline in 2009, compared to 7 percent and 26 percent respectively in 2006.<sup>47</sup>

While these statistics are encouraging, recent figures illustrate that Rwanda still experiences significant challenges with malnutrition. Government figures show that 44 percent of children experience stunting in Rwanda, 11 percent of children are underweight, with three percent suffering from wasting in 2010.<sup>48</sup> Therefore, more remains to be done to understand the complex inter-linkages between agricultural production and nutrition indicators, as well as implementing existing multi-sectoral strategies designed to address malnutrition in Rwanda such as the National Strategy for the Elimination of Malnutrition.

## Specific implementation targets

The success of the Rwandan agriculture programme has been met in part by MINAGRI hitting key implementation targets in the agriculture sector.

### Quantity of fertilisers imported

MINAGRI note that it imported 27,906,268 metric tonnes of fertiliser in 2009/10 – hitting 96 percent of its intended target.<sup>49</sup> Due to the import policy and one that subsidises fertiliser for farmers through a voucher scheme, the department estimates that inputs are more affordable for the population.<sup>50</sup> World Bank figures note that fertiliser use doubled in the country from 8.5kg per hectare in 2006 to 16kg per hectare in 2010.<sup>51</sup>

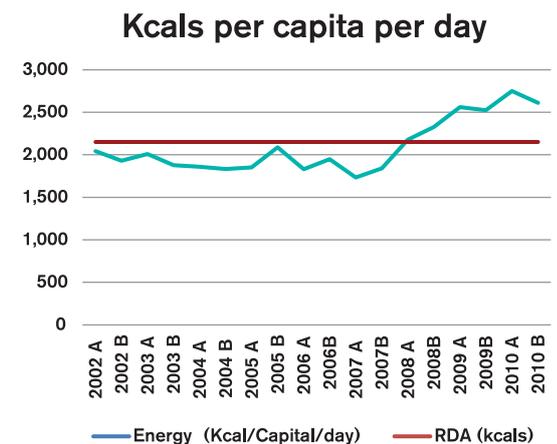
### Improvement and distribution of seeds

MINAGRI has also successfully distributed improved seeds of maize and wheat (through imported varieties from Tanzania and Kenya) and of cassava and beans (locally produced). World Bank figures show increased use of improved seeds for maize (by 61.8 percent), wheat (by 46.3 percent), and Irish potatoes (16.3 percent).<sup>52</sup> A local research institute, ISAR, 'has successfully released a new mosaic-resistant cassava variety into the extension system, which has contributed to food and nutrition security.'<sup>53</sup>

## Land use consolidation

In line with GoR targets, the areas of land under land use consolidation have increased markedly from their base levels at the beginning of the PSTA-II. In 2008, the area of consolidated land in the country stood at some 28,000ha, which had increased to 66,000ha in 2009 and reached over 254,000ha in 2010.<sup>54</sup> This total represents nearly 17 percent of the total arable land in the country.

**Figure 5. General Food Availability against Energy Requirements**



Source: MINAGRI, Agriculture Sector Performance Report: Fiscal Year 2009/2010, MINAGRI, September 2010

44 MINAGRI, Joint Agriculture Sector Review, op cit, 2010

45 World Bank, op cit, 2011, p. 6

46 International Food Policy Research Institute/ Concern Worldwide and Welthungerhilfe, Global Hunger Index, The Challenge of Hunger: Taming Price Spikes and Excessive Food Price Volatility, Washington D.C.: IFPRI, 2011

47 World Food Programme, Rwanda: Comprehensive Food Security and Vulnerability Analysis and Nutrition Survey, Rome: World Food Programme, July 2009

48 National Institute of Statistics Rwanda (NISR) and Ministry of Health, Rwanda Demographic and Health Survey 2010: Preliminary Report, Kigali: NISR, 2011

49 MINAGRI, Agricultural Sector Performance Report, op cit, 2010

50 MINAGRI, Agricultural Sector Performance Report, op cit, 2010

51 World Bank, op cit, 2011

52 Ibid

53 MINAGRI, Agriculture Investment Plan 2009-2011, Kigali: Government of Rwanda, 2009

54 IFDC, Crop Intensification Program 2008/2009 : Evaluation Report, Alabama : IFDC, March 2010

## Some remaining challenges

MINAGRI has achieved notable success through implementation of the PSTA-II and CIP, as described above; however, literature review and field interviews reveal that challenges remain in the implementation of agricultural strategies and achievement of long-term goals of poverty reduction, food security and transformation of agriculture to become highly commercialised.

### Gaps in the agricultural budget

The overarching challenge for the implementation of GoR agricultural strategies remains a lack of funds. MINAGRI note that the identified budget for the PSTA-II totals around US\$815 million for 2009-2012, with a contribution from GoR and development partners of US\$490 million. Therefore, there exists a funding gap of around US\$325 million for the agriculture budget – representing around 41 percent of the total budget.<sup>55</sup>

The budget gaps have particular significance for resource-poor farmers. For example, there exists an 86.41 percent gap in the budget for activities to improve the production of and value addition for domestic staple food. Programmes that attempt to strengthen rural financial systems for farmers have a 53.9 percent funding gap. Importantly, a programme to re-structure extension services to create district platforms that would bring agriculture services closer to farmers has an 81.0 percent gap.<sup>56</sup> These gaps are significant due to the predominance of staple foods in the farming practices of resource-poor smallholder farmers, and identified challenges for this group such as lack of access to credit and extension advice.

**“The overarching challenge remains a lack of funds.”**

**Table 2. PSTA-II Funding Areas 2009-2012**

PSTA-II Programme Area	Funding requirement 2009-2012	Funding gap	Percentage gap
Production support and value addition for staple goods	US\$14,522,417	US\$12,548,000	86.41
Strengthen rural financial systems for farmers	US\$21,077,000	US\$11,364,392	53.9
Re-structure proximity services	US\$15,900,000	US\$12,864,635	81.0
Sustainable management of natural resources	US\$158,571,429	US\$127,627,789	80.0
Food security and vulnerability management	US\$17,700,000	US\$15,856,658	89.56

Source: All figures taken from MINAGRI Investment Plan 2009-2012

### Coverage

Interviews in the case study areas suggested that coverage from agriculture support services remains limited. This was particularly the case for extension advice, where government statistics show that one extension agent under the responsibility of local authorities may serve as many as ten thousand farmers.<sup>57</sup> Interviews also indicated that improving irrigation coverage was a priority for MINAGRI, particularly important in the context of changing rainfall patterns in the country.

Field level interviews confirmed this challenge. Data from this study illustrates that 37 percent of all respondents (programme participants and non-participants) received agricultural or related advice from local authorities. Among programme participants, 54 percent suggested that they did not receive agricultural or related support outside of the Concern programme compared to 32 percent of non-programme participants. Related to this issue, a number of farmers suggested that although private sector services were available near to their household (for example, to purchase fertilisers) they felt that they were unable to afford these inputs without external support.

Some farmers stated that they found it difficult to join marshland cooperatives due to high fees, a lack of encouragement to join or that they had too many other activities. This constraint exacerbated coverage issues. For example, only 36 percent of the non-programme participants interviewed were a member of a cooperative. This finding is

<sup>55</sup> MINAGRI Agriculture Investment Plan 2009-11, op cit, 2009

<sup>56</sup> Ibid

<sup>57</sup> Patrice Hakizimana, Rwanda Agricultural Extension Services System: Operating and Funding Modalities, UN-ECA 11th Session of Intergovernmental Committee of Experts, Burundi, April 2007

significant, as the GoR largely channels agricultural support through cooperative groups, and means that efforts should be made to raise the incomes of resource-poor farmers, or alternatively, to support MINAGRI to create district platforms that would bring agriculture services closer to farmers.

### **Post-harvest storage and marketing facilities**

Secondary data suggests that a lack of post-harvesting and marketing infrastructure may reduce the incentive for farmers to make investments in intensifying crop production.<sup>58</sup> MINAGRI notes price fluctuations for some crops as 'post-harvest storage facilities are not well developed,' and that prices for some crops such as maize plummeted in 2010 following a strong harvest.<sup>59</sup> The GoR has noted the importance of this issue and has made it a strategic priority for the next PSTA, with support from USAID.

Field interviews confirmed this challenge, with one interviewee noting that:

*"With CIP [Crop Intensification Programme], the big challenge was with maize. It was a challenge because farmers were asked to grow maize on a large scale and it didn't help households very much. It really required them to access a market in a very short period of time so they could meet their basic needs. There wasn't enough of a market and so people were discouraged. If market can be provided for the CIP then it can be successful."* (Male interviewee, Nyaruguru)

While this issue remains important for those farmers that are able to produce a surplus, interviews noted that there remains a need from policy-makers and practitioners to put into place locally appropriate and affordable storage facilities for resource-poor farmers to build on their incremental improvements in productivity.<sup>60</sup>

### **Institutional development**

Secondary sources suggest that monitoring and evaluation (M&E) systems of the PSTA-II and CIP could be improved to identify the impact of agricultural spending on food security goals; however, it is recognised that funding has been limited in this area.<sup>61</sup> Figures for food production and food availability are encouraging, but analysts suggest that more data and evidence is required to explore complex inter-linkages between agricultural production and poverty and hunger reduction.<sup>62</sup>

MINAGRI has taken steps to address some of these issues, through the establishment of an electronic M&E system, designed to allow the monitoring of outputs and wider outcomes from its programmes.

Interviews at the national level noted that cooperation and coordination between GoR and development partners was strong at Ministry level, with joint planning of policy priorities and activities. However, interviews with representatives in the decentralised structures suggested that the planning and coordination of activities at field level, in particular through the Joint Action Development Forums (JADF), could be strengthened.

Addressing this challenge will require coordinated effort by GoR agencies, donors and non-governmental organisations to increase budget allocation for enhancing capacity for monitoring and evaluation at national and local level. In the latter case, strengthening decentralized structures and the JADF would be beneficial.

### **Unintended consequences of communal settlement and house improvement policies**

Field interviews suggest that the implementation of communal settlement and house improvement policies might have resulted in short-term livelihood shocks for some households in the case study areas. Interviews from the field study suggested that in some cases, households perceived that they had lost investments in land and assets as they moved into new settlements. Other interviewees suggested that they had lost financial assets as they were required to purchase materials for new homes under the house improvement policy.

While data is fragmentary, the issue raises important questions for the links between policy implementation and the contribution to the resilience and long-term progress among the poorest households. This may merit further investigation.

**“Policymakers and practitioners should put into place locally appropriate and affordable storage facilities.”**

58 IFDC, op cit, 2010

59 See MINAGRI, Joint Sector Review, op cit, 2010, p.11/14

60 Comments by senior Concern Worldwide staff member, November 2011

61 IFDC, op cit, 2010

62 World Food Program, op cit, 2009

## Improving the lives of the poorest farmers

Issues of coverage and access mean that the Government of Rwanda, in common with many other countries, experiences challenges in improving the lives of the poorest farmers with the smallest parcels of land.

Despite impressive economic growth rates, MINALOC notes that Rwanda has struggled to translate this growth into rapid poverty reduction.<sup>63</sup> Although poverty rates dropped quickly following 1994, they have since stayed stubbornly high, with poverty rates dropping from 60.4 percent of the population in 2000 to 56.9 percent in 2006.<sup>64</sup> MINALOC similarly notes that income inequality levels have also risen markedly in the country.<sup>65</sup>

Poverty remains concentrated in resource-poor farming groups. Low-income agriculturalists (in particular female headed households), agro-labourers and marginal livelihood groups remain the most likely to suffer from food insecurity.<sup>66</sup> Analysts show that these groups account for some 46 percent of the population but have 76 percent of households in the lowest wealth quintile and 73 percent with a poor food consumption score.<sup>67</sup> Over 91 percent of people gaining income from agricultural labour are classified as poor.<sup>68</sup>

MINAGRI note that 'Rwanda has made progress in increasing crop production at the national level (2,150kcal per day produced in 2009). However, the majority of households are not food self-sufficient and are often unable to make up for this with purchases.'<sup>69</sup> Policy think-tank IFPRI notes that in Rwanda 'while the majority of rural households would benefit from rapid agricultural growth, the most vulnerable households – those with very small land holdings and few opportunities to participate in the production of export crops – would likely benefit less.'<sup>70</sup>

This challenge, therefore, illustrates the need to both increase support to the most marginal groups and tailor programmes so that they contribute to building assets and improving the resilience of resource-poor smallholder farmers.<sup>71</sup>

63 MINALOC, National Social Protection Strategy, op cit, January 2011, p.11

64 Ibid, p.11

65 Ibid, p.11

66 World Food Programme, op cit, 2009, p. 90

67 Ibid, p.90

68 Ibid, p.90

69 MINAGRI, Agricultural Sector Investment Plan 2009-2011, Kigali: Government of Rwanda, 2009, p.6

70 Xinshen Diao et al., Agricultural Growth and Investment Options for Poverty Reduction in Rwanda: Washington D.C.: International Food Policy Research Institute, 2010, p.ix

71 Interview with Concern Worldwide Rwanda staff member, September 2011

**Typography in Ruganga Cell, Gakenke district of Northern Rwanda**



## Zainab Nyirazirwanda

Zainab Nyirazirwanda, 45, has two children, and a young grandson. She lives in a small household surrounded by scattered vegetable plants and creeping passion fruit trees in the Kivuruga sector of Gakenke, Northern Rwanda. Zainab was widowed during the 1994 genocide.

Describing her experience with the programme and her success Zainab says 'In the past, I used to dig without getting any harvest. I had no food to eat. I couldn't afford Mutuelle de Santé [a national health insurance scheme] for the children. I always harvested about 15kg of beans and often got no corn at all due to the lack of manure.'

'I used to eat about once a day. I had sweet potatoes and beans and I used to buy all of the vegetables that I ate.'

Concern partner Imbaraga helped Zainab by teaching her new agricultural techniques such as progressive terracing and planting in rows, providing her with new tools and seeds, and linking her to a cooperative with other vulnerable farmers.

'Imbaraga gave us training and took us for field visits to see how to keep vegetables so that we could sell our goods. The programme also gave me a goat, the manure from which I mix with cow dung for my fields.

'Now, I grow a variety of vegetables like spinach, beans, maize, egg plants and passion fruit. I harvest about 100kgs of beans and 150kgs of maize. I can sell maize for 250fr a kilo [25p] and beans at 300fr a kilo [30p]. By selling at harvest I am able to save.'

'Vegetables also really help me because they allow me to eat well and I can sell any surplus on. These days a bundle of greens can sell for 50fr [around 50p] in the dry season.'

'I've bought myself almost everything I need; I have a phone, a cow, goat and a mattress that I sleep on. I can afford health care for my child. It's all because of the modern farming methods I have learned through the programme.

Because of her success in selling her crops, Zainab has been able to buy some new land from her savings of £35 and hire four people to work on her land for three days a week.

'I started trading salt and palm oil because I had a little money to trade. I can get a 2000fr [around £20] profit from selling a sack of salt which can be sold in two market days.'

'I can afford meat twice a month now. I have chickens that lay eggs and I sell each egg at 80fr [8p]. Life is much better now and I can now save money, I have 95,000fr in my account [around £95]'

'Because of the programme, I can speak in public and make contributions during meetings. I can do a lot of things in the market. There's just a lot in my head...I was taught to make manure and to keep vegetables. I am able to eat twice or three times a day now and I consume food of good quality.'

'I plan to manage the resources and money that I have well in order to keep my son in education. He is currently in senior school. I'm saving money now, in preparation for his future schooling. Hopefully, he'll specialize in mechanics.'

**Case study: Donna Ajamboakaliza**



**“Because of the programme, I can speak in public and make contributions during meetings. I can do a lot of things in the market.”**

## Promising practices to support resource-poor smallholders

This section outlines how the Concern Worldwide Livelihoods Programme attempts to address some of the challenges identified, and demonstrates promising practice to support resource-poor smallholder farmers to improve agricultural productivity

### The Concern Worldwide Rwanda Livelihoods Programme

Since 2007, Concern Worldwide has been implementing a Livelihoods Security Programme with partners in three districts of Rwanda (Huye, Nyaruguru and Gakenke). The overall programme goal is to enhance the livelihood security of poor and extremely poor households and communities living in three of the most food insecure provinces of Rwanda, through improving agricultural production and off-farm livelihood opportunities.

Concern Worldwide activities are aligned with Government of Rwanda programmes on agriculture such as the PSTA-II and Crop Intensification Programme – in particular sub-programmes on increasing production levels of staple crops, improving the capacity of cooperative groups, and the *Girinka* 'One Cow per Family' programme. The programme targets the most vulnerable and resource-poor households in its approach.

Coordination with GoR policies and activities is achieved through Government structures and regular meetings including a Joint Sector Review, a monthly Agriculture Sector Working Group on the national level and a Joint Action Development Forum (JADF) on the district and sector level.

The Livelihoods Security Programme contains two sub-programmes: firstly, an agriculture programme that aims to increase household income through improving farm yields, and secondly, an income-generation programme that aims to increase household income through off-farm employment. This study focused on the agriculture programme, specifically on productivity increases, including crop and livestock production, of resource-poor farming households.

Concern Worldwide works through local partner organisations and has a broader goal to strengthen its partners and district and sector agronomists. Partner organisations include Urugaga Imbaraga in Gakenke district, ARDI in Huye district, and SDA-IRIBA in Nyaruguru district.

The specific activities undertaken through the Concern Rwanda agriculture programme are as follows:

- 1. Promoting appropriate agricultural techniques to enhance soil fertility, and access to inputs (cassava, corn, beans) such as:**
  - Training and follow up support on agricultural activities such as crop spacing, crop rotation and row planting
  - Proving improved seed varieties (high yielding and virus resistant) for cassava, beans and corn
  - Improving access to non-organic fertiliser
  - Training on household provision and use of compost and manure
- 2. Controlling hillside soil erosion by:**
  - Planting trees and grass (agro-forestry practices)
  - Digging ditches to prevent water run-off
- 3. Promoting household gardens, for household consumption and income generation purposes**
  - Providing vegetable seeds and gardening equipment such as watering cans

**“Concern Worldwide activities are aligned with the Government of Rwanda programmes on agriculture such as the PSTA-II.”**

#### **4. Distributing livestock (pigs, goat and cows) as a capital asset and source of manure, assisting with animal husbandry training and housing. Each district distributed different types of livestock:**

- Gakenke: pigs to all participants
- Huye: cows to selected households and/or cooperatives and goats to all participants
- Nyaruguru: cows to selected households and/or cooperatives and goats to all participants

#### **5. Encouraging farmers to form pre-cooperatives and supporting them in legal registration, through the provision of:**

- Training on savings
- Loans based on rotation credit of small groups
- Group production of key crops

### **Approach**

#### **Promoting appropriate agricultural techniques, improved soil fertility, and access to inputs**

Concern Worldwide partners demonstrated to farmers improved agricultural techniques such as planting in rows, crop rotation and seed selection, as well as advising on application of fertilisers by mixing organic manure with small amounts of chemical fertiliser, encouraging home production of compost and integrated pest management.

Partners distributed high-yielding and virus resistant seeds and tools to participants for use in household and community fields, complementing the approach. Partners also encouraged participants to establish seed banks, which they would manage with support from local authorities.

Findings from the study indicate that there was considerable take up of new techniques and agricultural inputs among participants. These were highly valued and reported as one of the most important aspects of the programme.

*"Life is good, [it has] changed. Before, my children and I didn't have enough to eat but then we started getting fertiliser and we used manure. We grew and got some produce."* (Female widow and genocide survivor, Nyaruguru district)

*"Five years ago life was not easy for us. Our practices were poor. When we planted we would put five or six seeds in a hole. Now we use no more than two seeds. It is giving us more harvest - even with my weakness."* (Female widow, with HIV positive status)

#### **Controlling hillside soil erosion**

The Concern Worldwide Rwanda programme also supported participants to control hillside erosion using progressive terracing techniques. This approach included planting trees and grass as well as digging ditches to prevent run-off of water. This approach complements GoR policy priorities of improving soil fertility and reducing erosion through terracing.

The study indicated that respondents were highly aware of the importance of erosion control as it impacted upon their productivity.

*"What is very important for high productivity is fertiliser and fighting soil erosion. Without fighting soil erosion even the fertiliser will wash away."* (Male programme participant)

#### **Promoting household gardens**

Participants were encouraged to establish household gardens for food security and income-generation. Partners assisted this process through training and the distribution of vegetable seeds, tools and watering cans. As a GoR policy, non-programme participants also received advice from local government on using a household garden. This approach activity links to activities in the health sector that provide community training on the importance of preparing and consuming vegetables, illustrating an important cross-sectoral approach to nutrition.

Programme participants also reported a number of benefits that came with the household garden related to income (42 percent) and improved health and consumption (42 percent) as shown below. The programme participants also reported better access to vegetables as they were close to the home (32 percent) and ability to give away extra produce to neighbours and people in need of food (8 percent).

*"We eat vegetables every day. We never used to have them at all. This is because we grow them."* (male programme participant, Nyaruguru).

**Table 3. Benefits of household garden among programme participants**

	Programme participants (n=43)	
Income	18	42%
Health and home consumption	17	42%
Food source close to home	13	32%
Give away produce	3	8%

### **Distribution of livestock**

Partner organisations distributed livestock, including pigs and cows, to participants. This activity aligns with the Girinka 'One Cow Per Family' programme, which aims to provide productive assets to the rural poor and to provide manure for agricultural activities.

Partner organisations took a participatory approach to distribution by involving communities in the process of selecting beneficiaries as well as in selecting and purchasing the livestock. Partners also provided training and follow-up visits by veterinarians and agronomists on the care of livestock. A key approach of the programme was to pass the off-spring from livestock to neighbours as a way to improve the sustainability of interventions.

*"We share the benefits, when the cow delivers we decide who is most in the need, and who can look after it best, and give them the cow. It is a chain, when that cow delivers then we pass to somebody else."* (male participant with three children, Gakenke)

### **Encouraging farmers to form pre-cooperatives**

The fourth area of intervention in the Concern Rwanda agriculture programme was encouraging participants to join pre-cooperatives.<sup>72</sup> This intervention complemented GoR land-use consolidation policies, and allowed resource-poor smallholder farmers to overcome the difficulties that some experienced in joining cooperatives in the marshlands due to the stated reasons of high fees, lack of encouragement to join or that they had too many other activities.<sup>73</sup>

Pre-cooperatives facilitated by Concern Worldwide provide saving and loan facilities, channel agricultural inputs and provide training through the cooperative groups. The cooperative savings and loan scheme, or 'Tontine' (a traditional saving practice), enabled participants to save in a secure place and take loans out based on their savings.

A larger number of programme participants (96 per cent) than non-programme participants (32 per cent) were members of a cooperative. As a result, significantly more programme participants (88 per cent) than non-programme participants (16 per cent) were saving at the time of the interview. Other stated benefits included the feelings of being with others, social support and overcoming fear and loneliness.

*"My life has changed. I never felt that I was with other people; I felt like people were laughing at me. But now I can see others who are in the same situation as me or even worse. I feel supported and I feel that I am with others. I am no longer lonely."* (Female programme participant, widow)

<sup>72</sup> Concern Rwanda refers to their groups as pre-cooperatives until they have legal status through registration with GoR, whereby they would be called cooperatives (referred to in this report as cooperatives).

<sup>73</sup> Noted by a senior Concern Worldwide staff member, November 2011

## Success factors and lessons learnt

Analysis of the Concern Worldwide Rwanda programme illustrates promising practices, which can support MINAGRI and development partners to address some of the challenges illustrated earlier in this case-study.

### *Integrated package of support*

It was clear throughout the analysis that an integrated package of support and a combination of interventions that reinforced one another led to positive outcomes for the participants. For example, planting grass for controlling soil erosion had an additional benefit in feeding cattle. This, in turn, provided manure for improving soil fertility, which ultimately contributed to increased crop production and income through selling surplus food and off-spring.

Furthermore, the package was multi-sectoral and cut across production, social and institutional support. The main activities focused on improving skills in key farming practices, while opening up channels of access to inputs (such as seeds, compost, erosion control structures, small livestock), while grouping participants together in cooperatives to facilitate savings, loans and companionship. This approach is similar to the 'Graduation Model' that has been tried in a number of other contexts, which combines access to loans and institutional support.

### *One-to-one support and field demonstrations*

Field demonstrations and household visits following a classroom-style lesson, led by an agronomist from the Concern Worldwide partner organisation, embedded learning through the programme. The household visits enabled participants to access advice and tailored support to address challenges that prevented them from achieving food security and income-generation.

The difference between participant and non-participant household gardens exemplifies this approach. Findings showed a high level of uptake among participants compared to non-participants, although the GoR also promotes household gardens. Significantly more participants (83 per cent) than non-participants (53 per cent) had a household garden. In addition, researchers and partners noted that non-participants in the programme often had poorly tended gardens or had abandoned them.

As non-participants were less likely to have household gardens and if they did they were not as well managed, the implication is that policies need to be accompanied by regular, personalised support visits to encourage target groups.

*"Yes they came back several times to help me. It was helpful as I felt encouraged. I felt that people cared. I don't think that there is anything else that they needed to do. If agriculture support like this could reach many people, it would be very useful."* (Female participant, Huye)

### *Participatory cattle distribution*

Research findings showed that selecting and purchasing livestock in a participatory manner helped communities to take ownership of the process. The distribution of small livestock for people that didn't receive a cow worked particularly well, as the livestock reproduced quickly, and participants were able to use them for manure and to sell the offspring.

There were a number of critical success factors regarding distribution. Firstly, communities were involved in identifying project participants, as well as selecting livestock and distribution methods. Local authorities were involved in following up the first recipients to ensure that offspring are transferred to the next beneficiary on the list. Therefore, both the local community and authorities were involved in design and execution of the project.

Secondly, Concern Worldwide Rwanda veterinarians provided training and follow-up visits by on the care of livestock, and assisted participants in linking with sector veterinarians.

*"When it comes to off-spring it really takes knowledge. Like how to shelter farm animals and their offspring."* (Male programme participant, Huye).

Despite the main aim of livestock distribution being to increase the availability of manure, there were also a number of ‘spill over’ effects where the livestock provided additional income and a source of food.

*"Things have changed, my pig delivered and I sold it to buy more land. I didn't have any animals before. I wasn't able to grow vegetables as I didn't have manure and generally things have improved."* (Male programme participant, Gakenke)

### **Pre-cooperatives and psychological and social support**

Pre-cooperatives facilitated by Concern Worldwide Rwanda provided saving and loan facilities, channelled agricultural inputs and provided training. These cooperative structures provided access to savings schemes and loans and improved social assets of participants. This played a significant role in participants feeling increasingly confident and making supportive friendships.

This approach was based on the GoR policy of encouraging people to work within cooperatives to facilitate management of inputs and harvest for CIP programmes and increase access to credit with formal financial services. The cooperatives played a role in helping to reinforce learning from Concern Rwanda interventions and passing knowledge among members. Through the cooperative fields, participants were brought together where they could share ideas and knowledge.

*"Because we are in a group we get ideas from other people and we benefit from each other. It is morale boosting because you can see what other people are doing and learn."* (Female programme participant and widow)

**Table 4. Responses on the stated benefits of Concern Worldwide Rwanda cooperative membership (50 respondents)<sup>74</sup>**

Friendship, overcoming loneliness, fun	25 (50%)	Motivation	3 (6%)
Loans	24 (48%)	Confidence and overcoming fear of going to the fields	3 (6%)
Learning	9 (18%)	Market access and selling in bulk	4 (8%)
Savings	5 (10%)	Inputs and offspring sharing	4 (8%)
Keep produce for home consumption	4 (8%)	Good produce	3 (6%)

### **Knowledge and asset transfer to non-participants**

The transfer of new knowledge and livestock to people outside the programme represents another success factor from the programme. Participants were encouraged to support other people in their community, by teaching them what they had learned and passing on offspring from their livestock, following a traditional system in Rwanda.

This process contributed to improving the confidence and self-esteem of participants as they became trainers in the community. It also facilitated a ripple effect, where the impact of the Concern programme spread beyond immediate participants.

*"I have old neighbours and when I see them practice agriculture in the wrong way I tell them how it's done; especially with kitchen gardens. I got the information when I went to community meetings with local leaders. But they didn't tell us practically what to do. But I was taught what to grow and how to grow it. So I pass it on."* (Male programme participant, married with four children)

Secondly, a number of participants were giving away extra produce to neighbours and people in need of food, which mainly included vegetables, and in some examples, milk.

*"I get one litre a day. I don't sell it but sometimes I give some to a colleague (in the cooperative) who also has HIV."* (Female participant, widow, HIV positive with young child, Nyaruguru)

<sup>74</sup> Responses are based on unprompted responses to a multiple response question, meaning that numbers may add up to more than the number of participants

## Jean Benchimas Mbashimana

Jean Benchimas Mbashshimana, 36, lives in the Busengo sector of Gakenge, Northern Rwanda. He lives in a small homestead with his wife, Gertrude Mbazimana and three small children aged ten, eight and six. His plot is surrounded by a highly-cultivated landscape of terraced farms growing cassava, beans and fruit such as bananas. He has been a beneficiary of Concern Worldwide partner organisation Imbaraga since 2007.

Jean describes the improvement he has made in farming practices and his achievements as follows: “before I started with the project, I just threw seeds onto the ground and had to work on other people’s land to survive. I used to get very little money for me and my family.”

“Through the programme I received a lot of training and advice on how to dig ditches for compost and manure, new techniques such as planting in rows and selecting seeds, and how to find markets for my produce. I was also taught how to look after pigs as well as how to cook and grow vegetables. It was only after I received the training that I really started farming.”

“I now grow more, and cultivate using methods tailored to the type of land we have, so I get a good produce. Before, we didn’t get anything. I am growing so much maize now and I am able to get a much better price for my crops.

As part of the programme, Concern encourages project participants such as Jean Benchimas to join cooperatives that allow them to share techniques, save money and take small loans. He said “we have started saving some money together from which we have bought two cows. We also collectively grow certain crops and when the harvest is ready we contact buyers to agree on a price”

Jean Benchimas has used the proceeds from the sales of crops to buy a pig that he will use for fertiliser and breeding. He has also bought two small pieces of land, and a small wood of around 50x80 metres, where he has developed an apiary to increase his income.

“Before I joined, I only ate one meal a day, and sometimes I used to go without food all day. But now, I have porridge, lunch and dinner and the children are in much better health.

“In the past, the children used to fall sick all the time now they have vegetables such as carrots and are in much better health.

“Things are so much better now and I hope to expand the banana plantation and work on my house. I have even been able to teach my neighbours how to grow pineapples and to look after pigs. It’s great to see them using these techniques and being happier.”--

**Case study: Robin Willoughby**



**“Before I started with the project, I just threw seeds onto the ground and had to work on other people’s land to survive.”**

## The impact of support to resource-poor smallholder farmers

Using the impact-chain analysis framework, this section illustrates that with targeted inputs and support, resource-poor smallholder farmers can increase their productivity and contribute to food security and poverty reduction goals.

The section below outlines the key outcomes for participants of the Concern Worldwide Rwanda Livelihoods Programme, including increased production levels, crop diversity, indications of improved food security, wealth creation and resilience building. Other related outcomes include greater confidence and learning and the building of social capital.

### Increased production levels and crop diversity

Increased production levels amongst programme participants represent one of the most significant findings of the study. Respondents were asked if their productivity had increased, stayed the same or decreased in the past three to four years. Significantly more participants than non-participants reported an increase in productivity.

**Table 5. Perceived changes in productivity 3-4 years ago to present**

	Programme Participants (n=47)	Non-programme participants (n=18)
Increase in productivity	45 (96%)	7 (39%)
Productivity stayed the same	2 (4%)	7 (39%)
Decrease in productivity	0 (0%)	4 (22%)

Respondents were then asked to provide an example of the changes in productivity by estimating the output of one of their most important crops, typically maize or beans, in the past three to four years. Results are displayed in Table 6.

The analysis found a significant difference in the change of output between participants and non-participants in the last three to four years, with participants reporting almost double the output of non-participants. There was no significant difference in output between participants and non-participants before the programme.

**Table 6. Participants stated change in output levels from 3-4 years ago to present of their most important crop**

Stated output	Participants (n=41)	Non-participants (n=9)	Sig. (P) T-test
Output before (kilos)	32.7	23.9	0.328
Output after (kilos)	90.9	48.3	0.018*

*"We used to get one bucket of beans and now we get two. Before I harvested 30kg of beans and now I harvest 60kg. Maize I grew nothing, and now I grow 40kg. Because before we didn't apply fertilisers, but now we do."* (Female participant, widow, Gakenke)

### Crop diversity

A number of the participants started growing new crops in the time-frame of the programme. In an open-ended question, the majority of the participants (73 per cent) started growing a new crop, in particular vegetables (51 per cent). In contrast, only a minority of the non-participants (16 per cent) started growing new crops (vegetables or maize) in the past three to four years.

There were also differences in the types of crops grown by participants and non-participants. The results show that significantly more participants were growing maize, Irish potato and vegetables, compared to non-participants. The most significant difference between the two groups was that many more programme participants were growing vegetables, related to the greater number that had a household garden

As these crops are used for both home consumption and income-generation, this is likely to translate into improved nutritional outcomes for participants and wider and more diverse engagement in different agricultural markets, which can improve resilience in a time of crop failure or disease.

**Table 7. Main crops grown by respondents**

	Participants (n=51)		Non-participants (n=19)		Sig. (P) Mann-Whitney test
Maize	35	69%	7	37%	0.017
Sorghum	20	40%	5	26%	0.294
Cassava	31	62%	10	53%	0.482
Sweet potato	35	71%	10	53%	0.144
Irish potato	15	31%	1	5%	0.026
Vegetables	48	96%	9	47%	0.000

### Increased food consumption and dietary diversity

Research analysis found that significantly more participants reported an increase in the number of meals from three to four years ago than compared with non-participants. Qualitative evidence suggests that this is due to an increase in participant productivity, and subsequently the amount of food allocated for household consumption.

**Table 8. Have your number of meals improved?**

	Participants (n=50)	Non-participants (n=19)	Total
Yes	35 (70%)	4 (21%)	39
No	15 (30%)	15 (79%)	30

*“You can’t fail to get something to eat! My consumption has increased. I eat vegetables every day. I can now eat two times a day and I eat different food. For example, what I eat for lunch is different from dinner.”* (Female programme participant, widow)

The analysis found that the average number of meals consumed by participants per day is significantly more than it was three to four years ago, from one meal (1.08) to slightly over two meals (2.19).

*“I can also eat three times a day. Previously, I only ate one meal a day and I didn’t have porridge. Now we have an abundance of food because we are growing in a good way.”* (Female programme participant, widow)

### Greater dietary diversity

The study found that significantly more programme participants than non-participants consumed increased amounts of vegetables. Participants stated that their increased intake was due to their use of a household garden and vegetable seeds distributed through the programme. When asked what the benefits were of the household garden, 42 percent stated consumption of vegetables and 32 percent stated they now had a food source close to home.

*“We eat vegetables every day. We never used to have them at all. This is because we are growing them.”* (Male programme participant)

Respondents were also asked the number of servings of vegetables eaten at present and three to four years ago. The analysis shows that both participants and non-participants were eating significantly more servings of vegetables per week than compared to three to four years ago. However, on average, participants ate an additional serving of vegetables per week.

**“You can’t fail to get something to eat!”**

**Table 9. Changes in the servings consumed of vegetables 3-4 years ago to present**

	Non-participants (n=41)	Non-participants (n=4)
Servings of vegetables per week 3-4 years ago	0.63	1.17
Servings of vegetables per week at present	5.76	4.67
Sig. (P) T-test before and after	0.000*	0.009*

*“The children also eat more and they have different types of food, beans, bananas and sweet potatoes. Things have changed, they were there before, but we walked a distance to buy the food, now we have the food from our own garden. It helps us.”* (Female programme participant, widow and HIV-positive, Gakenke)

In addition, some of the participants who received a cow through the programme reported that their household was now consuming milk.

## Wealth creation and resilience building

### Creating wealth and employing other people

Analysis of research data shows that significantly more participants than non-participants were able to increase their resilience to external shocks through acquiring assets, increasing income levels, improving coping mechanisms and by employing others to undertake additional agricultural labour.

Many households increased their income due to agricultural support from the programme, and a number were able to generate wider benefits for the community by employing other people on their farms.

*“What I gained most from the programme is the training on new techniques for agriculture, now I can harvest more, I can sell some, and I can consume some.”* (Female participant, HIV positive)

Some others stated they were able to create surplus from agriculture through new techniques and could then sell more produce. Participants also reported other income-generating activities started by the programme, such as selling offspring from livestock; selling or trading milk along with selling vegetables from their household garden (35 per cent of participants).

A number of participants raised the reduction in time spent working for others.

*“In my life previously, I worked so much for other people. I used to get very little money for me and my family. When we joined the project we got a lot of training and I started farming.”* (Male participant with three children, Gakenke)

*“I have animals. I can sell greens and vegetables. I no longer work for others.”* (Female participant, widow, Huye)

There were also participants who were able to hire labour through increased income, which was particularly important for people who were HIV-positive, due to the constraints that they experienced in farming their land.

*“Because of good produce I have something to sell. Because I earn more money, I am able to hire people to work on my land. In a week I have two workers and I pay them 500[francs] per day.”* (Female participant, widow, Huye)

### Building resilience to shocks

Distribution of livestock also played a large role in building assets of beneficiaries. In Rwanda, as in many other African countries, the cow represents a symbol of wealth in society; however, during 1994, many livestock were killed. This led to a large decline in household and agricultural assets among the population. One participant described the importance of receiving a cow through the programme:

*“Before the genocide I had lots of cows. The compound was full of lots of cows, even Friesian cows, but they were eaten all in the genocide. ARDI [Concern Rwanda partner] has given me one cow so I am very happy.”* (Female participant, widow, Huye)

**“We eat vegetables every day. We never used to have them at all. This is because we are growing them.”**

Researchers asked participants about the types of assets they had purchased in the last three to four years in an open-ended question. The responses from participants included purchases of livestock, land, help with house construction, as well as acquiring new communication devices such as a radio or mobile phone.

*"I am doing very well now! My plans are to expand the banana plantation and to refurbish my house. The plots that I now have I attribute to the project."* (Male participant, married with children, Gakenke)

### Improved coping mechanisms

Participants reported that their coping mechanisms had improved as a result of increases in assets and access to savings. For example, participants noted that they were more likely to use savings, sell assets or crops, or get a loan from a cooperative to deal with a problem, whereas non-participants were more likely to obtain cash from friends or to work for other people.

**Table 10 – Indication of How Participants and Non-Participants Manage Problems**

	Participants (n=37)		Non-participants (n=17)	
Use of Savings	10	27%	0	0%
Cooperative loan	9	24%	0	0%
Sell crops	5	14%	0	0%
Have medical insurance	3	8%	0	0%
Ask to borrow money from friends	2	5%	4	24%
Casual labour	0	0%	6	35%
Don't know	4	11%	7	41%

### Confidence, learning and improved social cohesion

Cooperatives played a significant role in bringing people of similar situations together. In fact, the most cited benefits of cooperative membership were friendships and overcoming loneliness. A number of participants also mentioned more motivation and confidence, along with overcoming their fears of working in the fields after the genocide.

Qualitative evidence shows that this has occurred among participants who often faced extremely difficult circumstances, particularly women without a partner, women with HIV-positive status or affected by depression, who often experienced social exclusion and stigma for their status.

*"My life has changed emotionally and economically. I never felt that I was with other people; I actually thought that people were laughing at me. They thought I was poor. Now I can see others who are in the same situation as me or even worse. I feel supported and I feel that I am with others. I am no longer lonely, I can speak to people and I can tell them my problems – I used to feel dead inside, but now I can run to people."* (Female participant, widow, Huye)

Finally, the programme had a range of social, economic and psychological outcomes for the most vulnerable people in rural areas, the majority of whom were women. This was due to the targeting approach of the programme that not only identified the poorest in communities, but also took into account other intersecting characteristics of vulnerability, such as gender, age and marital status.

This resulted in a large proportion of programme participants being women (71 per cent) and female-headed households (63 per cent). Analysis shows that this group faces particular vulnerability to food insecurity in Rwanda.<sup>75</sup>

**"I have animals.  
I can sell greens  
and vegetables.  
I no longer work  
for others."**

<sup>75</sup> World Food Programme, op cit, 2009, shows that female-headed households experience specific vulnerability to food insecurity in Rwanda

## Conclusions and recommendations

This case study illustrates that the Government of Rwanda has invested significantly in smallholder agriculture, resulting in increased agricultural output. Analysts suggest that overall agricultural production has outstripped consumption over the past three years, which has helped to buffer Rwanda from food price spikes in East Africa. Overall food availability has similarly improved in the country, one indication of food security.

However, improving the lives of the poorest farmers with the smallest plots of land remains a challenge in Rwanda, with poverty concentrated in the rural poor. These challenges arise, in part, due to gaps in the agriculture budget that have led to limited coverage in some interventions, in particular for extension advice and support to the production of staple crops. Other identified constraints include institutional and human resource limitations at local and district level, a challenge which development partners can play a role in addressing through capacity building.

Using the example of the Concern Worldwide Livelihoods Programme, this study illustrates promising practice to achieve agricultural productivity gains for vulnerable smallholder farmers with the smallest parcels of land. Identified approaches to improve productivity of these farmers include an integrated package of interventions, which included production support as well as access to finance. The importance of one-to-one field demonstrations, a participatory cattle distribution scheme, and pre-cooperatives that provided financial and psychological and social support were also identified.

But what do these findings mean within the wider policy context? Firstly, these findings demonstrate that with targeted support the poorest smallholder farmers can increase their agricultural productivity and contribute to food security and poverty goals. Secondly, the case study suggests that governments and donors should incorporate this group into strategies to reduce poverty and hunger, with approaches that include productive, institutional and psychosocial support.

**“I feel supported  
and I feel that I  
am with others.  
I am no longer  
lonely.”**

*People bring their goods to Bushoka  
village market, Kivuruga sector,  
Gakenke district of Northern Rwanda*

To scale up promising practice identified in the Concern Worldwide Livelihoods Programme, and support the Government of Rwanda to meet key targets on poverty and food security in the agriculture sector, Concern Worldwide suggests these recommendations for consideration by international donors, the Government of Rwanda and practitioners.

### **For international donors**

- Bridge the budget gap and support MINAGRI to implement the PSTA-II, in particular focusing on funding extension programmes, production of staple foods, construction of locally appropriate storage facilities, improving access to markets and developing an M&E system for key food security indicators
- Invest in operational research on integrated packages of support that can contribute to improving the lives of resource-poor and vulnerable smallholder farmers. Research should focus on women farmers and investigate the success factors that could be replicated elsewhere.
- Monitor delivery mechanisms (for improving coverage, post-harvest and marketing facilities, institutional development), the impact of agricultural outputs and outcomes on lives of resource-poor smallholder farmers in relation to food security and poverty reduction, and the unintended consequences of policy implementation on the poorest members of society
- Build on Rwanda's experience to develop and implement pro-poor policies and programmes that can improve the food security of resource-poor smallholder farmers. These policies should focus on integrated packages of support that cut across sectors and provide agricultural, institutional and psychosocial support

**“Bridge the budget gap and support MINAGRI to implement the PSTA-II.”**

### **For the Government of Rwanda**

- Continue working with development partners to expand an integrated package of support that targets resource-poor smallholder farmers, particularly women
- Work with non-state actors to support resource-poor farmers to organise pre-cooperatives and facilitate access to extension services, high-quality inputs and training on new techniques
- Increase coverage of extension services, by adopting community-based voluntary agriculture extension service schemes to directly support smallholder farmers, particularly the resource-poor and vulnerable
- Improve market linkages for food crops to expand opportunities for smallholder farmers, improve harvesting techniques to minimise loss/waste and demonstrate locally appropriate cost effective crop storage facilities to protect farmers from loss of income
- Renew focus on both the supply and demand side of food security through linking agricultural initiatives with the nutritional and food security status of households

### **For practitioners**

- Ensure that programming targets vulnerable women and smallholder farmers through multi-sectoral interventions
- Build on the success factors indicated in this case study and work with MINAGRI and district authorities, to scale-up activities to reach resource-poor smallholder farmers, demonstrate affordable and locally appropriate storage structures and offer training in negotiation skills to ensure that smallholder farmers secure reasonable farm gate price for their produce
- Ensure that programmes build human resource and institutional capacity at community level and build the links between community groups and government services, with a strong focus on making government services more responsive to the needs of poor, female farmers
- Engage in advocacy at meso- and macro levels to ensure that policies are effective and implemented effectively to reduce poverty and address food security of the poorest



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## Further information

This report is based on the findings of a case study developed by Concern Worldwide and the Natural Resources Institute, University of Greenwich. Data collection was undertaken in Rwanda during August 2011.

This full report is available online at: [www.concern.net/resources](http://www.concern.net/resources)

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All photos: Mike Goldwater / Concern Worldwide

## Annex

### Key Government of Rwanda Policy Framework and Outputs

#### Programme 1 – Intensification and Development of Sustainable Production Systems (including the Crop Intensification Programme)

Objective	Activities	Proposed Outputs 2009-2012
Sustainable management of natural resources, water and soil husbandry	Investment in irrigation and erosion control	850,000ha of additional land protected against soil erosion using radical and progress terraces
Integrated development and intensification of crops	Assisting producers to diversify their production base Introducing activities and technologies to improve yields and incomes on small plots	
Livestock development	Training farmers on animal husbandry and health Expanding the ownership of cattle and other species suited to households with very small landholdings	270,000 households reached through the 'One Cow Program' Incidence of livestock disease reduced to zero
Marshland development and irrigation development	Increase the amount of marshland under irrigation and training farmers on marshland use Developing modern irrigation, particularly pressurized irrigation Increase the usage of fertiliser and seeds	9,000ha of additional marshlands developed Legal provision for water user associations and tenure for irrigation systems created
Supply and use of fertilisers and seeds	Show farmers the benefits of using fertiliser through demonstration plots Improve private sector provision of seeds to reduce the strain of GoR budgets Diversifying food sources and increase the consumption of high-protein animal products	56,000MT national fertiliser usage 15,000MT production of foundation seeds
Food and nutrition and vulnerability management	Establishing a food security and nutrition monitoring system Targeted home-grown school feeding initiatives and link small-scale farmers to school feeding projects	Average food availability increased per day from 1,734kcal per day to 2,150kcal per day, 49g to 55g of protein and 23g of lipids Food and nutrition security monitoring system expanded 1,000 hermetic storage cocoons operational

## Programme 2 – Support to the Professionalisation of Producers

Objectives	Activities	Proposed Outputs 2009-2012
Promotion of farmers' organisations and capacity building for producers	Investment in irrigation and erosion control Develop the managerial and entrepreneurial skills of this group to increase social capital	100 additional cooperatives successfully marketing products 20 additional community innovation centres
Restructuring extension services (extension)	Promoting participatory learning systems Training of extension agents	200 cooperatives hiring private sector cooperatives 500 extension agents receiving specialised training
Research for transforming agriculture	Participatory research agenda that includes farmers organisations Strengthen the scientific and technical capacity of ISAR	6 participatory research projects established 7 research stations restructured to be driven by farmers' needs

## Programme 3 – Promotion of Commodity Chains and Agribusiness Development

Objectives	Activities	Proposed Outputs 2009-2012
Create an environment conducive to business and entrepreneurship	Targeting young people and women's cooperatives Increase market access by developing a sanitary phytosanitary system	Weekly cargo out of Kigali airport tripled One laboratory and organisation of certification process for fresh produce
Promotion and development of traditional and non-traditional export crops	Improve the quality of post-harvest handling Create closer links between farmers and processors Develop a horticulture and sericulture export crop	20,000MT of green speciality coffee produced 5 new tea factories produced with private sector participation 90,000MT of pyrethrum exported 25,600MT of horticulture exports 6,400MT of hides and skins exported Maize, rice and cassava value chains developed
Production and value addition for domestic staple goods and develop market-orientated market infrastructure	Link staple crop production to processing facilities Increase post-market handling facilities and agro-processing Rural road networks and international linkages	Maize, rice and cassava value chains developed Fish value chains developed 20 cold storage facilities developed and 3 new agri-export facilities developed 1,000km of new all weather roads
Strengthen rural financial institutions	Strengthen and widen the range of institutions to include financing to agriculture Increase investment finance for processors, exporters and other entrepreneurs	US\$15,000,000 lent through second-storey credit line US\$1,000,000 available for agro-exports through venture capital window Rural savings deposits increased by 200 percent between 2008 and 2012

## Programme 4 – Institutional Development

Objectives	Activities	Proposed Outputs 2009-2012
Institutional strengthening and capacity building	Consolidate new management information system Develop sanitary and photo-sanitary, and seed certification systems	New, fully functional M&E Gender strategy designed and implemented Capacity building plan designed and implemented
Policy and regulatory framework	Articulate the sector's policy framework Management of irrigation and water systems, agro-exports and a decree and law on land consolidation	Policy framework for soil, irrigation and land use Policy framework for agro-exports
Agricultural statistics and ICT	Strengthen the quality, reliability, relevance and timeliness of statistical information	Reliable, real-time production and market information systems Sector-wide ICT in place
Monitoring and evaluation systems	Establish systems for the monitoring and evaluations of projects Establish coordination mechanisms with other Institutions and the private sector	SWAp signed and implemented Feedback procedures developed, including through citizen report cards
Decentralisation	Fiscal decentralisation in agriculture and establish systems of coordination between central and district administrations	Capacity of sectors sufficiently improved to manage decentralised implementation

NB: Policy framework and outputs taken from MINAGRI, Agriculture Sector Investment Plan 2009-2012, (2009)



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