

COLLEGE OF AGRICULTURE, ANIMAL SCIENCES AND VETERINARY MEDECINE

SCHOOL OF AGRICULTURE AND FOOD SCIENCES (SAFs)

**DEPARTMENT:** CROP SCIENCES

**OPTION:** HORTICULTURE/ ACADEMIC YEAR 2019-2020

**Module:** Agricultural extension and policies

**Component: Agricultural and natural resources management policies and laws**

Topic: **Make a short analysis for the pillar of CIP by showing its strengths, weakness, opportunity and threats**

**Assignment of agricultural and natural resources management policies and laws**

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**Done at Busogo, Tuesday On 2nd, November,2020**

**ASSIGNMENT OF AGRICULTURAL AND NATURAL RESOURCES MANAGEMENT POLICIES AND LAWS**

**GROUP 5 YEAR 4 HORTICULTURE**

Question: **Make a short analysis for the pillar of CIP by showing its strengths, weakness, opportunity and threats** (maximum 2 pages per 1 pillar).

**CROP INTENSIFICATION PROGRAM (CIP)**

**1.Definition:**

Crop Intensification Program (CIP) is a flagship program implemented by the Ministry of Agriculture and Animal Resources to attain the goal of increasing agricultural productivity under PSTA II. It was launched   September 2007, as a pilot program.

**2.Main goals of Crop Intensification Program (CIP):**

* Increasing agricultural productivity in high potential food crops and
* ensuring food security and self-sufficiency across the country.

**3.The pillars of Crop Intensification Program (CIP):**

* 1. **Land use consolidation**
  2. **Facilitation of improved inputs (Improved seed and fertilizers use)**
  3. **Proximity extension service by proximity service providers (Provision of extension services)**
  4. **Post-Harvest Handling and Storage (PHHS)**
  5. **Resilience and Sustainable Intensification**
  6. **Stimulate reliable, private-sector input and output markets:  through fertilizer electronic auctions**
  7. **Inclusive Employment and Improved Agrifood Systems’ Skills and knowledge**
  8. **An Effective Enabling Environment and Responsive Institutions**
  9. **Agricultural product marketing**
  10. **Promote Agro inputs dealer’s network**

**3. PILLARS OF CROP INTENSIFICATION PROGRAM**

**3.1. Pillar 1: Land Consolidation:**

This is a program which involves the growing one crop in a synchronized fashion that will improve the productivity and environmental sustainability in the same area by different farmers. Each farmer has his own plot (Property) in the consolidated area, it is done on farmer’s commitment before the season starts and crop choice is motivated by agro-bio climate conditions and economic potential. It also required resettlement of family housing in an administrative area (Umudugudu) from the agriculturally productive lands.

**Strengths:** CIP successfully convinced farmers by explaining the various advantages of land consolidation as it;

* reduces volume/cost ratio, logistics and transportation costs of inputs and output
* increases accessibility of inputs, by providing a focused market for farm inputs as the agro dealers can have a larger coverage
* provides increased coverage of proximity extension services
* increases land- and crop productivity.

**Weakness**: - low technology, delay in resettlement of family houses

**Opportunities:**

- Facilitates a concentrated market for farm produces,

-Location is near the farmer’s field.

- Enables equitable distribution of natural resources such as soil and water.

- Establishing family housing in administrative area (Umudugudu)

**Threats:**

- High costs of construction of infrastructures needed by family housing,

- Difficult understandings of farmer to adopt changes.

**3.2. Pillar 2: Improved seed and fertilizers use under CIP**

Cultivation of foods crops in Rwanda have long been predominantly by small holder farmer for subsistence living which cause the farm productivity levels to be very low. The low productivity is mainly assigned to the low use of inputs hence the solution lies in the facilitation of modern inputs such as improved seeds, fertilizers. This solution was proven to be effective in green revolution (Asia& America). Access to improved seeds was a result of low demand and high costs which was compounded by transportation to rural areas.

This issue was tackled by CIP’s supply-push approach where government initially supplied inputs and farmers are encouraged to use them with a percentage help in payment known as NKUNGANIRE.

Increasing the productivity of prioritized crops, CIP: imported improved seed and planting materials from Kenya & Tanzania, this increased the use of improved seeds from 3% to 40% (2007-2011). The capacity for seed production in the country was highly increased by RAB and other entrepreneurial farmers. Through bulk orders, CIP imported thousands tons of fertilizers and distribute them to famers for free through various service providers (agro-dealer) at a subsidized price hence the fertilizers use per year has increased from 8kg/ha to 23 kg/ha in 2010.

Even though CIP has achieved so much, still there is a hard journey to go in ensuring access and use of improved inputs as indicate by a CIP citizen’s satisfactory survey(IRDP,2018). This research finds: The less numbers of agro-dealers, exclusivity in TWIGIREMUHINZI program, poor implementation of TWIGIRE MUHINZI, high price of improved inputs and less adaptable seeds to be the leading constraints of the CIP.

3.3. Pillar 3: **Proximity extension service by proximity service providers**

**Agriculture extension** is an important means in alleviating poverty and achieving food security. Broadly speaking, agricultural extension is the “delivery of information inputs to farmers” (Anderson and Feder, 2007). Studies show that Sustainability and productivity of agricultural sector worldwide depends on the quality and effectiveness of extension services among other factors (Kimaro et.al, 2010).

In line with CIP strategy, the Government of Rwanda, in 2009 adopted the National Agricultural Extension Strategy to ensure ideal conditions for the dissemination and exchange of information between producers, farmer organizations and other different partners in order to transform and to modernize the agricultural sector (NAES,2009).

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| **Strength**   * Qualified extension workers(A0andA1). * Farmers promoters: many trained and progressive farmers in the country. * Presence of infrastructures that supporting extension services like storages infrastructures and training centers. * Farmers participation through communication with extension agents services. | **Weakness**   * Farmers do not know where to find agricultural services providers. * Farmers do not know how to read and write. * Local authorities and extension workers do not do in their own farms what they are supposed to demonstrate to farmers. * Lack of information sharing among different actors in agricultural sector. |
| **Opportunities**   * Presence of a good policy for cooperatives promotion. * Communication facilities like radios. * Agricultural Education institutions like CAVM and expansion of agricultural advisory services. * Use of Kinyarwanda languages. | **Threats**   * High population density. * Farmers resist to change. * Climate risks. * Insufficiency of extension workers. |

3.4. Pillar 4: Post Harvest Handling and Storage (PHHS)

Agricultural products are among important factors in alleviating country’s economy. Under traditional way of conserving and storing food produces, the rate of perishability, loss of quality which eventually lead to the reduction in the volume of agricultural products hence reducing income to the society and the country.

The program has recently taken several initiates to minimize the post-harvest losses of prioritycrops. These initiatives aim to improve the handling and storage of harvested farm produces.CIP is currently engaged in making an inventory of available community storage facilities in thecountry and attempt repairing of such facilities as CIP is also responsible for the management ofcountry's strategic food stocks. The program intends to provide hands-on training to farmers attwo levels - farmers' cooperative and household levels. The program is also embarking onconstruction of public drying areas in each district. It is also currently in the process of acquiringsmall tools and equipment for improving the current practices of post-harvest processing andstorage by farmers. CIP also intends to establish models of storage house in each district.

SWOT analysis of Post-Harvest Handling and Storage (PHHS).

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| **Strength** | **weaknesses** |
| Training of farmers cooperatives in post-harvest best practices | Due to age and level of education, post-harvest practices not well perceived. |
| Post-harvest best practices dissemination | Debates are not well understood due to communication barrier |
| Post-harvest tools and equipment distribution | All post-harvest tools not fully used due lack of electricity, man power for manipulation, and skills |
| post-harvest losses survey | Not all surveys are accurate, data are not hundred percent true, |
| Construction of drying grounds and equipment at large | Lack of capacity building with respect to improved harvest and post-harvest handling practices. |
| 3 policy strategies focused on improving the enabling environment at the post-harvest and marketing levels were drafted; one of these strategies, the post-harvest strategy was adopted by government. | Some policies are not well perceived and ignored |
| Over 60,000 farmers were trained in post-harvest handling and storage best practices. | At whale house, all conditions are not kept safe, maintenance and use not efficient |
| National strategic grain reserves development program set and followed | Up on implementation, strategic grain reserve program not adopted as due. |

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| **Opportunities** | **Threats** |
| Constructing materials has become cheaper and affordable. | Some constructing materials are not up to standards to do the job well. |
| Many shareholders and cooperatives are being engaged in agriculture hence there is increasing of post-harvest handling centers | Many stored produces meet with biotic stresses such as drought, heat and chilling causing loss of quality. |
| There is Post-Harvest Policy support to the Government of Rwanda with the intent to improve the business environment for the private sector | 3 policy strategies focused on improving the enabling environment at the post-harvest and marketing levels were drafted; one of these strategies, the post-harvest strategy was adopted by government. |
| There is Post-Harvest Management that will lead to better handling practices for farmers seeking higher prices for better quality commodities | Many fungi are themselves capable in producing ethylene during the course of invading fresh produces at post-harvest phase (Ansari et al. 2012). |
| Investment Financethat will result in strengthening supply and incomes within the maize and bean value chains | Post-harvest centers may incur with theft. Robberies might attack and take all harvest. |
| Market Linkages with firms that will result in strategic partnerships to develop business ventures and invest in postharvest handling and storage. | Incidence and accidents may occur like fire break, flooding and destruction of storage structures. |

3.5. Pillar 5: **Stimulate reliable, private sector input and output markets through fertilizer electronic auction.**

SWOT ANALYSIS

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| STRENGTHS | OPPORTUNITIES |
| * Solving the problem of public sector budget restraints * Advanced technology and high management skills * Risk transferring and sharing * Facilitation and encouragement for the development of private sectors * High quality * Strength in the competition * Low bureaucratic hierarchy * Personal control | * Great needs for public housing in Rwanda * Political supports from central government to local government * Large number of private capitals in market * Performance issues * Innovation issues * Infrastructure development in rural areas * Less political issues |
| WEAKNESSES | THREATS |
| * Financial status * Government aid or support * Taxes * Low profit for private sectors due to the fixed price of input such as fertilizers and seeds * identifying the required inputs for   distribution in collaboration with service providers and planning for the seasons | * Relatively low level of commitment for government. * Inadequate legal framework and unclear responsibilities of private sector * Accountability * Transparency * Lack of non-profit organizations and Increase of government responsibility. |

**3.6. Pillar 6: Resilience and Sustainable Intensification**

**Challenges:**

Rwanda’s agriculture is challenged by topographic and climatic conditions, as more than 70% of its farming is carried out on slopes ranging from 5 to 55% inclination. This leads to erosion, soil degradation, and annually, soil losses can vary between 20 to 150 t/ha.

Traditional pastoralism is useful to intensification. The livestock sector is also affected by drought, which results in reduced water and feed availability, poorer access, particularly in the east and parts of the south, and increased vulnerability to diseases. Production losses to the dairy value chain were most significant in major drought years.

With the scarce land and increasing population, and a depleting natural resource base, sustainable agriculture intensification is not an option for Rwanda’s agriculture but a necessity. Developing a resilient agriculture sector will require technologies and practices that build on agro-ecological knowledge and enable smallholder farmers to counter environmental degradation and climate change in ways that maintain sustainable agricultural growth.

Policy action

Agricultural risks, especially pests and diseases but also erratic rainfall, are ever present across Rwanda. Although they do not cause large deviations from general yield trends or aggregate crop or livestock production on a national scale, their impacts on production likely explain part of Rwanda’s yield gaps. Thus, Agriculture will be sustainably increased only if farmers are provided with a framework helping to improve their resilience to both production and market risks. This policy will amplify partnership with Meteorological centers upgrade ways of capturing reliable data regarding farming early warning. This will help to elaborate contingency plans in advance and share with responsible stakeholders in terms of taking prevention measures.

**Promote sustainable water management for climate-resilience in farming and rural areas**

***Development of more efficient irrigation systems, dams, and soil water management***

Rwanda’s agriculture is dependent upon rainfall with two rain seasons and intervening dry periods. Crop and livestock production is vulnerable to water-related stress resulting in significant productive losses - crops may suffer from insufficient rainfall or rainfall at the wrong time (coffee, for instance).

Irrigation can alleviate these risks yet only 1.6% of agricultural operators have invested in irrigation. Moving forward, the Government will renew efforts to expand irrigation usage within the context of both integrated water resources management (IWRM) and landscape approaches and while promoting greater private sector involvement in irrigation technology supply and management.

This will require a combination of measures to: (i) increase the capacity of on-farm water harvesting and storage; (ii) groundwater development; (iii) expanding and modernizing irrigation infrastructures; (iv)enhancing soil moisture retention capacity; and (v) drainage and flood management.

There is scope for promoting greater use of drip irrigation and similar technologies that enhances on-farm water productivity and improves resilience. This can be especially important for food insecure households.

**Weakness:**

-Low technology application

- Insufficient fund

-High slope of land

**Opportunities:**

* Availability of natural resources such as houses, water, electricity

**Threats:**

-Competitive exports focus on high-quality niche products which compete in higher-price and lower-volatility markets

-High inputs costs

-Rwanda suffers from high transport costs that affect the marketing of its goods because it is a landlocked country.

**3.7. Pillar 7: Inclusive Employment and Improved Agrifood Systems’ Skills and Knowledge.**

**Strengths:**

-Foster skills development through strengthened agriculture knowledge and information systems

-Vocational education and training.

--Promote youth and gender sensitivity

-Access to information for farmers and other sector stakeholders.

-Promote on- and off-farm income diversification through fostering entrepreneurship.

**Opportunity:**

-Enhance nutritional literacy skills in the broader population.

-Commitment to work with consumers to inform on healthy diets.

- Diversified supply of agriculture products and food preservation

-Coherent mainstreaming into the general sector policy and strategy frameworks.

3.8. **Pillar 8: An Effective Enabling Environment and Responsive Institutions**

* Facilitate shifting the role of the government from market-actor to market enabler.
* Strengthen intra-governmental coordination on agricultural policy and strategic cross-cutting issues (horizontal coordination).
* Enhance the effectiveness and efficiency of service-delivery, facilitating decentralized administration (vertical coordination).
* Partner with farmers and improving civil society engagement.
* Promote evidenced-based policy programming, by leveraging data and using integrated information technologies to improve current monitoring on performance indicators, and digitalization.
* Improve the regulatory environment to agriculture input, factor and output markets.

-Down- and upstream business partners of agriculture for knowledge and technology transfer

- Predictable access and suitability of financial services to farmers and agriprocessors.

SWOT ANALYSIS OF **an Effective Enabling Environment and Responsive Institutions**

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| Strength | Weakness |
| -High resilience due to actual and potential diversification of small farmers with familiar technology  -Proximity to many of continent’s key food market  -strong and effective development state with emphasis on agriculture as foundation  -Policy consistency with agriculture and food  -Positive global disposition to Rwanda coupled with emerging reputation as producer of quality | -extremely small land holding perpetuates subsistence farming with low land and labor productivity.  - low level of horizontal and vertical collaboration between and among producers.  -Limited indigenous private sector with a predomination on services sector. |
| Opportunity | Threats |
| -Shifting demand trends across Africa and especially within cities towards a preference  -Increase of global consumption for key export  - substantial potential for import substitution especially in processed food markets. | -competing demands for available finance (public and private)  -Inertia among farmers discourages adoption of innovation  -Increasing number and severity of adverse climatic events  -Global and regional market instability  -Continued population growth and unmet demands for jobs leads to additional pressure on already constrained land holdings. |

3.9. Pillar 9: **Agricultural product marketing**

Strength covers the points like Strong links with the government providing subsidies, nationwide presence, high control over all the operations within the production process. Even government vision is to encourage the consistency, standardize in agriculture marketplace by restructuring the measures between consumers, suppliers and farmers. Actual value sighting constructed on demand and supply. Weakness covers the points like Farmer already have strong attachment to existing local marketers. Lacks confirmed market positioning. Opportunity covers the points like Farmer will get the benefits that whole process of auction will be based on quality of product and it will be totally transparent. Farmer will get the timely payment through online (bank or mobile payment).

Challenges cover the points like Participating all the stage of agricultural product market through one joint connected marketplace is challenge. Already too much competition within the market is there. So many current participants already contributing the undistinguishable products.

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| **Strength**   * Service providers in contract with NAEB * Government restructuring the measures between consumers and suppliers * Actual value sighting constructed on demand and supply * Strong links with the government providing subsidies * Formation of strong farmer platform, cooperatives and associations * Increase of agricultural production | Weakness   * Farmers already have strong attachment to existing local marketers. * No much marketing promotions or awareness program. * Lack of Confirmed Market Positioning * Farmers need to be alert for online auction and need to learn about the technologies * Lack of skill and illiteracy of poor farmers and difficult to adopt new technology in extension services as of poor quality * Price not competitive as that of neighbor from Uganda and Tanzania * Poor road infrastructure reduces price received by producer because transport cost is high . |
| Opportunity   * Whole process of auction based on quality of product * Transparent System * Cash Less Transaction * Timely Payment through online platform * Banks: intervention of SACCO, Microfinance, Banque Populaire in order to provide credit * Favorable political environment. | Threat   * Many current participants already contributing the undistinguishable product * Arrangement of technical skill   development program nation wide   * Long time to get benefit |

**3.10. Pillar 10: Promote agro input dealer’s network**

Agro-input dealers are sellers of agricultural inputs that include seeds, fertilizer, crop protection chemicals, farm equipment and machines, veterinary products and animal feeds. Agro-input dealers play a major role in ensuring that farmers access some of the important agricultural inputs required to improve agricultural productivity in their respective farms. Agro-input dealers are trained in business management, safe product usage and handling, product knowledge and crop husbandry practices. The training has enabled agro-input dealers to provide inputs and share knowledge on improved production practices with smallholder farmers. Most of the agro-input dealers, however, still lack business support and hence still encounter various business constraints relating to high transportation costs, low eﬀective demand, lack of appropriate market information, lack of storage facilities and limited skills and knowledge. The high transportation costs can be attributed to the long distances covered to source the inputs.

Limited access to necessary agro-inputs has been the main cause of low agricultural productivity and the overall poor economic growth and development in most parts of Sub-Saharan Africa. Agro-input dealers play a signiﬁcant role of bringing the inputs close to the farmers. The agro-input dealers play a vital role in guaranteeing that farmers have access to some of the essential agricultural inputs that contribute to boosting the agricultural productivity. Despite this importance, the strategic role and position of the agro-input dealers has not been fully exploited especially in disseminating and communicating the key agricultural development technologies such as Integrated Soil Fertility Management.

The five main causes that lead to low use of agricultural inputs include the country’s geographical structure, insufficient inputs stocks, affordability, farmers’ knowledge and skills and incentives. As in the case of Geographical structure more that 39% of the cultivated land is on slopes which in turn occupies over 25% of available land in Rwanda. This not only increases the risks of soil erosion, but also limits the use of tractors in agricultural activities for example in 2003; Kenya had 50 times more tractors per hector than Rwanda. Another issue is Insufficient National Stocks, Rwanda has for a long time lacked indigenous sources of fertilizers and pesticides. In 2005, only 8% of the households used inorganic fertilizers and 12% improved seeds. The Ministry of Agriculture and Animal resources report that imports of agricultural inputs have not been enough to cover the country’s demand, and the ability of delivery chain to get bulk purchases to farmers is weak. Affordability is a problem because of lack of domestic sources of fertilizer and high cost of pesticide, while most farmers are poor and lack access to credit to finance inputs. Farmers’ knowledge and skills are limited, though a number of farmers understand the fact that better use of inputs could improve the yields. Farmers ‘incentives are not defined, so there is always no clear link between price and quality. At the same time, there has been some evidence that farmers have been reselling seeds and fertilizer to meet short-term needs.

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| **Strength**   * High mobile penetration which imply increasing prospects of the growth of industry. * Customer satisfaction since the farmer get quality products with the right doses told to them. (applying chemical under prescribed limits can address the burning issue of toxic levels of residue found in plant) * Loyal customer base since the farmer buy product at competitive prices and products are delivered at their doorsteps. (the issue of high pricing can be addressed if more number of players enter the market and farmers get range of prices to choose from. * Useful for both illiterate and literate farmers (thus, there is a possibility of increase the number of customers). | **Weakness**   * Delivery time of agro-inputs to the farmers should be as low as possible. * Presence of more players is needed in the market for competitive pricing and offers. * Need to develop efficient distribution system * Country’s geographical structure * Insufficient inputs stocks * Affordability * Farmers’ knowledge and skills and incentives |
| **Opportunity**   * Need of consumer laws to be made protective to a great extent * Scope to increase customer base in the future * Increased opportunity of market segmentation through data mining to develop products which customized products in small packing and agricultural implements can be made for small and marginal farmers to have wide customer base | **Threat**   * Rising costs of input might narrow the customer base * Cost of the capital incurred to the start-ups |

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