

**COLLEGE OF AGRILTURE, ANIMAL SCIENCE AND VETERINARY MEDICINE**

**SCHOOL OF AGRICULTURE AND FOOD SCIENCE**

**DEPARTMENT OF CROP SCINCE**

**OPTION OF HORTICULTURE**

**MODULE: AGRICULTTURE EXTENSION**

**COMPONENT: TECHNOLOGY TRANSFER KILLS AND STRATEGY.**

**ASSIGNMENT ON CROP INTEMSIFICATIONPROGRAM**

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**INTRODUCTION**

The Crop Intensification Program (CIP) had the of main goal increasing agricultural productivity in high potential food crops and ensuring food security and self-sufficiency. Low productivity in Rwanda is mainly associated to poor use of inputs. Continuously; low productivity continuous to prevent farmers from using input; as many farmers barely produce sufficient food to feed their family; and therefore have no income with which to purchase yield enhancing inputs. Therefore; have the solution lies in breaking this cycle through appropriate intervention. Green revolution in Asia and elsewhere was mediated by the felicitation of modern inputs such as improved seeds fertilizers and pesticides to farmers.

Increasing agriculture produce in Rwanda and food security in Rwanda requires replication of such adoption of modern inputs by smallholder farmers. Rwanda has adopted the CIP since 20017; it was adopted because most inputs was imported and the cost of transportation to areas where it is needed plus the inherent poor demand for inputs kept the prices of inputs high. CIP has the main goal of accomplishing of increasing the production of food crops across the country; I also undertake a multi-prolonged approach that includes facilitation of inputs both improved seeds and fertilizers.; play major role in land consolidation; provision of extension services and it specifically focuses on six major crops here in Rwanda that are; Maize; Wheat; Rice; Irish potatoes; Beans and Cassava.(minagri.gov.rw)

In this topic we are going to discuss on four pillars that are core to Crop Intensification Program; those four pillars are:

* Facilitation of improved inputs (improved seeds and fertilizers).
* Consolidation of land use.
* Provision of extension services.
* Postharvest handling and storages.

1. **IMPROVED SEEDS AND FERTILIZERS**

Many farmers in semiarid areas of Africa have not yet benefited substantially from growth in agriculture productivity. Improved seed and varieties is crucial for achieving growth along with other productivity enhancing inputs; such as soil and moisture amendments and mineral fertilizers. (Smale M. et al). Seeds are critical to successful crop production and inevitably; farm productivity and profitability. Fertilizer supplies nutrients to the soil that are essential for growth. Increased use of fertilizers and improved seeds are partially credited with thr large increase agricultural productivity. (SAHEL; 2014) (SAHELCP.COM).

**STRENGHT**

* Hybrid seeds are the best seeds for planting as they been bred to resist against elements such as weeds and parasites in crop production.
* Hybrid seeds adapt differently to various climatic regions.
* Modern fertilizers incorporate all necessary nutrients composition and are of different types to suit different needs they attend at different times of production. (Muchunu P; 2017)
* Hybrid seeds are made to increase production of agricultural crops
* Available farmer organization as well as the availability of land.
* Improved breed /varieties of crops.

**OPPORTUNITIES**

* Improved access to agricultural inputs and services is the one way of the most important ways to boost yields and helps smallholders move from subsistence to more market-oriented farming.
* Improved seeds and fertilizers will turn yield into higher profits and improve livelihoods for smallholder farmer and their families.
* Also under CIP, government imported improved seeds from the neighboring countries such as Kenya and Tanzania for different varieties like beans, rice
* It will facilitate the government to improve local retail access to inputs and services that will empower rural entrepreneurs to reach thousands farmers.
* Improve smallholder farmer income and productivity through strengthening agro-dealers that allow farmers to access improved inputs and technologies.

**WEAKNESS**

* Access to information limited in rural areas and some urban centers.
* Agriculture not attractive as a profession hence little use of improved inputs
* Fake farm inputs available
* Lack of access to credit or financial services.
* Lack of financial stability.
* Higher cost of improved inputs and services.

**THREATS**

* Crops pests and diseases.
* Environmental degradation
* Insufficient financial resources.
* Policy changes.
* Decline soil fertility.
* Political instability.
* Social-culture taboos and values.

1. **POT-HARVEST HANDLING AND STORAGES**

The most important goals of post-harvest are keeping are keeping product cool; to avoid moisture loss and slow down undesirable chemical changes; avoiding physical damage such as bruising; to delay spoilage. Once harvested, exposure of crops to the sun and air can increase water loss by many folds. Therefore, harvested crops can be kept at cooler place in the orchard or in temporary thatched house for cooling. Spraying the fruit with water may help to maintain fruit quality in hot, dry weather. The transfer of fruit to the pack house soon after harvest minimizes the opportunity for water loss in the field. Transporting the fruit dry and fairly tightly packed reduces the risk of vibration damage.([www.nrclitchi.org](http://www.nrclitchi.org)).

**STRENGHT**

* Proper maintenance of crops.
* Increased shelf life of produce.
* Quality preservation of fresh produce.
* Construction of public drying area in each district.
* Availability of produce throughout the year (notably for seasonal crops)
* Market satisfaction.

**OPPORTUNITIES**

* Increased investment
* Increasing agricultural education institutions
* Government decentralization policy.
* Policy changes.
* Providing employment.
* Construction of infrastructures specifically for postharvest and storages.
* Training related to practices of postharvest and storages.

**WEAKNESS**

* Insufficient investment in agriculture.
* No strong linkage in value chain.
* Inadequate postharvest infrastructures.
* Small sized farmer.

**THREATS.**

* Shortages of refrigerated house.
* Limited technical knowledge.
* Poor managerial skills.
* High cost of equipment for postharvest and storages.
* Failure of farmers to adopt postharvest and storage.

1. **PROVISION OF EXTENSION SERVICES**

**Agriculture Extension** is dissemination and exchange of information between farmers and farmer’s organizations for increasing capacities of producers to maximize the use of resources. In 2009, Rwanda government were adopted the National Agricultural Extension Strategy to increase dissemination and exchange of information between producers, farmer organizations and other different partners to transform and to modernize the agricultural sector (Ndushabandi, N.E, et al 2018).

* 1. **STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS.**

The SWOT is analysis technique that gives answers to the questions related to strength, weakness, opportunities and threats within the agricultural extension and advisory system.

**STRENGTHS**

* Trained technical staff working in other development institutions and organizations
* Good gender balance in the national extension staff establishment – over 36% female extension workers
* Existence of many Farmers organizations, NGOs and Projects as service providers;
* Qualified extension workers (A0 and A1) at District, Sector and cell level
* Existence of infrastructures to support extension services (training centers, storage infrastructures and marketing).
* Many trained and progressive farmers in the country.
* Trained Technical staff in some of the institutions and organizations

**WEAKNESSES**

* Lack of information sharing among different actors in agricultural sector;
* Lack of extension training, educational or information material for extension workers, farmers, local authorities and other actors
* Lack of specialized training for extension workers at District and sector level
* Inadequate resources for extension workers (means of transport, GPS, Veterinary Kits, Computers.)
* Media which are not effectively and sufficiently used in agricultural extension information sharing/dissemination;
* Insufficient quality seeds. When available, late delivery of quality seeds;
* Farmers don’t know the value of using quality seeds and continue to use seeds of bad quality, even when quality seeds are available from various sources;
* Farmers don’t know where they can find agricultural service providers;
* Some farmers do not know how to read and write.
* Inadequate human resources with specialized extension skills, particularly livestock and veterinary specialists
* Research results not properly translated and simplified into extension messages
* Resistance to change by the farmers

**OPPORTUNITIES**

* Creation of Rwanda Agricultural Board (RAB) and the National Agricultural Export Board (NAEB) as promotional bodies
* Recent decentralization of agricultural extension activities aimed at addressing specific needs of farm households within each district
* Good governance and political will for development of the agricultural sector
* Existence of a supportive National Agricultural Policy and related policies, approaches and programs Ex: Ubudehe, Imihigo, IDP, Agasozi Ndatwa and Girinka program
* A growing network of micro-finance institutions in rural districts
* Increasing Agricultural Education Institutions (UR, CAVM, KIST, INES)
* Well established communication infrastructure and facilities (Several radio stations, newspapers, ICTs)
* Existence of a good policy for Cooperatives
* Political stability in the country
* Good climatic conditions favorable for agriculture development.
* The use of one local language understood by everyone
* Existing regional and international markets
* The resettlement policy (Umudugudu) policy;

**THREATS**

* Some local authorities do not consider agriculture as a priority;
* Lack of motivation for Extension workers;
* Lack of functional relationship between MINAGRI and decentralized extension services;
* Resistance to change by the farmers;
* Insufficiency of extension workers, in particular veterinary specialists;
* None certified seeds sold at the same price as certified seeds;
* Agri inputs expensive compared to the purchasing power of the farmers;
* Climatic risks (especially in the East and the South);
* High interest rate on bank credits;
* Lack of insurance scheme in agricultural sector.

**SWOT ANALYSIS OF CONSOLIDATION OF LAND USE**

**STRENGTH**

* The implementation of pilot projects for land consolidation lead to development of legal framework of land consolidation
* The productivity, efficiency and competitiveness in agricultural sector
* Formation of rational land use, its structural improvements
* Creating conditions for the development of rural infrastructure
* Goals and objectives of environmental policy are implemented during the consolidation process
* Formation of competitive farms capable of competing with regional farms
* Sustainable development of rural regions
* Creation of new jobs as a result of the formation of competitive farms
* Easy Control of pest
* Reduction of land fragmentation
* Production increase
* Creation of rational system of land use

**WEAKNESS**

* The land consolidation process must include the final clean-up work; if roads are only designed but not installed the formed solution will be demolished the expectation of landowners will not be met.
* Low activeness of land owners. complex preparation and implementation procedures for land consolidation projects
* Land consolidation projects must provide funding for infrastructure development, environmental protection and other measures
* Lack of public information system about land consolidation process
* Land consolidation projects may be initiated by land owners public land trustees and county governor. this limits the opportunity for other persons who are not entitled to initiate, however are interested in land consolidation projects to participate in the land consolidation process.

**OPPORTUNITY**

* Government support through subsidiaries
* Market availability
* Access to bank loan
* Possibility to diversify economic activity
* Possibility to rearrange small scattered land plots into ration land suitable foe effective use
* Afforestation of inefficient land plots park planting
* Creation of new jobs.
* Possibility to clean –up the abandoned unused however fertile land.

**THREATS**

* There are no safeguards protecting consolidated land plots against reverse process- splitting
* Notwithstanding ecological, cultural aspects but only seeking to increase agricultural production; the threat is imposed to the preservation of biodiversity, soil erosion landscape changes
* If land consolidation projects do not provided sources of funding for infrastructure development and environmental protection in advance, land consolidation solutions will not be fully implemented
* The imperfection of legistration governing land consolidation process may have a negative impact on further development of land consolidation process
* Low activeness and skeptical attitude of land owners to this process

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