

Making markets work for women and youth: agri-business clusters as motors for high-value AIRCA input packages



A concept note for the Lake Victoria Basin

The Association of International Research and Development Centers for Agriculture (AIRCA) wants to address the most pressing needs to improve agribusiness in the Lake Victoria Basin. The work will focus on combining the existing skill sets and experiences of its members, focusing on proven existing input technologies relevant to the Basin that can be scaled up and out to achieve real impact in agricultural production and nutrition for the farmers and their families. The project focuses on women and youth farmers, using a demand-driven approach that is responsive to local conditions and needs. Knowledge and skills dissemination and transfer through agribusiness clusters will support the utilisation of technologies, through input packages, so that real impact can be achieved by the farming families that live in the Basin.

Our **vision of success** is to reach 250,000 women and youth who will increase their income by 25%, and 1,000,000 consumers who will have improved access to more nutritious food. The project will focus on 'WINS', by creating and enhancing market access for **women and youth**, targeting agricultural sectors yielding high income and better **nutrition** on a **sustainable** basis, and by leveraging our combined strengths in input packages through agribusiness clusters. The specific input packages will include: integrated pest management, fertilizers, water, energy, seed, knowledge management/ICT and land management. The agribusiness clusters will combine the input packages with other financial and business support services to enable sustainable business development.

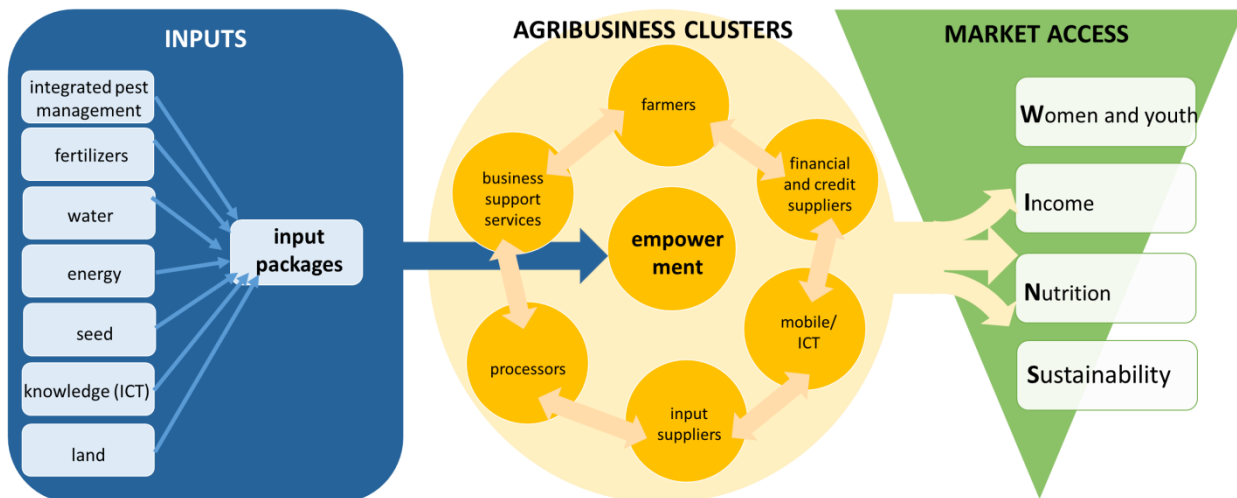


Fig 1. Conceptual framework of making markets work for women and youth

1. Justification

The Lake Victoria basin is characterised by pervasive development challenges caused by low agricultural productivity, lack of access to markets, low incomes and the rising vulnerability of poor people. Biophysical factors (mainly pests, diseases, soil infertility, land degradation), climate change effects, low capacities and institutional/policy bottlenecks remain major constraints for development, while development assistance to agriculture has declined. Longer-term development challenges include:



Picture 1: Map of the Lake Victoria Basin

- dependence on a few primary commodities
- poor human capacity and weak governance
- increasing migration to urban areas
- low employment, especially of the youth and women
- climate change.

These have cumulative negative impacts on smallholder farming, the basic source of livelihood for the rural poor.

Smallholder agriculture registers low productivity with staple cereal crops yielding less than 1 t/ha. Significant losses in cereal and vegetable crop yields occur due to many reasons including lack of quality seed, pests, diseases, weeds, poor soils, limited knowledge in improved crop and integrated pest management and post-harvest losses, while livestock productivity is constrained by the absence of sustainable sources of quality fodder and animal diseases.

Rural productivity is further constrained by poor rural infrastructure, lack of access to water and low investment in water management, including irrigation. Smallholder farmers also lack access to credit and markets for their produce, whose value chains are not well developed and have poor market linkages.

Consequently, the Lake Victoria Basin has one of the highest concentrations of poor people. The lag in agricultural productivity has resulted in doubling the number of people living on less than \$1 per day from 1990 to 2001 to over 46% of the population and over half of them ultra-poor, living on less than \$0.50 per day. Closely related to poverty, food production has fallen behind population growth in the past two decades, leading to food and nutritional insecurity. Rural poverty is projected to worsen in the coming years due to rapid population growth, growing pressures on limited land and water resources, further decline in agricultural productivity and agro-ecosystem degradation due to climate change amongst other factors.

Land degradation is a Basin wide problem characterized by a decline in the overall quality of soil and vegetation, reducing agricultural yields, raising energy prices, loss of future incomes and reduced access to land. The soils are poor in organic matter from continuous cropping and poor farming practices. There is an over-reliance on maize, which often suffers from drought.

The Basin is one of the areas where future scenarios indicate adverse conditions due to climate

Some of our work in seeds (CABI, AVRDC, ICBA)

Good Seed Initiative: implementation of fully registered farmer-centred seed systems around the world, leading to improved awareness of the value of good quality seed, good seed management practices, farmer registration, and income generation from supply of quality seed.

VegOne X: An online management and ordering system implemented to streamline the Tanzanian government's foundation seed supply with the demand from the private sector.

Farmer-led seed enterprises on African indigenous vegetables: training farmers in development and up-scaling of economically viable local level farmer-led seed enterprises, such as semi-formal 'quality declared seed' (QDS) produced by a locally-registered farmers producing for sale to the neighbourhood.

Integrated crop and seed production: integrated crop and seed production systems under water/irrigation management to strengthen local seed production of important and attractive crops under marginal environments.

Some of our work in integrated pest management (icipe, CABI)

African fruit fly initiative: An IPM package for fruit flies, leading to increased mango yields of 30%, at a value of US\$ 400-640 per hectare for mainly low income families and women.

Private-public partnership for up-scaling IPM technology: In partnership with ReallIPM (Kenya), the company produces biopesticides, biofertilisers and predatory mites that are effective against a range of pests

Push-pull IPM technology (www.push-pull.net): Integrated management of stemborer pests, striga weeds and soil fertility while providing high quality animal fodder, allowing integration and intensification of smallholder cereal and livestock systems.

Tsetse repellent technology: Management and control of tsetse flies, leading to enhanced milk production and increased traction power (ploughing) of bulls, therefore increasing land under cultivation and selling prices of animals.

Advancing IPM for development: IPM vegetable producer clubs adopted (95% of IPM recommendations for outdoor IPM tomatoes leading to 35% pesticide input cost reduction and 85% reduction in hazardous pesticide use. 20% increase in tomato price through use of market information and stronger links between producers and traders.

change; i.e. unpredictable rainfall, floods and drought and increased pest and weed problems. Further increases in food prices are expected. The effects of climate change interacting with soil degradation will further exacerbate the stresses on crop plants, potentially leading to dramatic yield reductions and likely to further deteriorate rural infrastructure. High dependence on rain fed agriculture makes the rural poor specifically vulnerable to drought. Climate change will affect biodiversity and the possibility of the Basin's ecosystem to deliver services like food, climate regulation and flood protection.

2. A focus on women and youth, nutrition and income

Women play a central role in agriculture:

- Women constitute a large proportion of the agricultural labour force (43% of farmers in developing countries)
- They depend heavily on agriculture for their livelihoods (>60% of economically active women in sub-Saharan Africa work in agriculture).
- They have an average of 20 - 30 % lower productivity than men attributed to differences in input levels.

Closing the gender gap in access to productive resources could increase agricultural output in the developing world by 2.5 - 4% and reduce the number of undernourished people by 12 - 17%, with higher gains in countries where the gender gap is wider and where women are heavily involved in agriculture such as the Lake Victoria Basin. Such a reduction in gender inequality in agriculture would also have important benefits for poverty reduction. African women's traditional roles in agricultural production are similar across ethnic groups in the Basin. Studies show that women often pool resources or knowledge and work in groups, both in producer organizations and in marketing collectives. Other studies have found that women are less likely to join formal farmers' organizations but they have informal social networks that are of critical importance for sharing information and knowledge.

Work carried out across the world has demonstrated the effects of working with women to increase both household income and nutrition. For example a public private partnership (IFDC and Walmart) in Bangladesh that has provided training to women growing vegetables, not just of cultivation techniques, but also on production, finance, market integration and nutrition has led to over 2,037 hectares of vegetable cultivation. As vegetable growing is primarily a women's occupation they have remained in control of the business and increased their family income through vegetable sales and therefore their families' nutrition as well, with a greater variety of food available for consumption with a greater variety of required nutrients.

The youth constitute more than 60% of the population in most countries in the Lake Victoria Basin and youth unemployment is high and growing. Although there are opportunities in agriculture and agribusiness, the youth often do not have the necessary skills or access to resources to enable them to earn a living from

Some of our work in fertilisers (IFDC, CABI, ICBA)

Fertiliser deep placement: Agribusiness clusters including 10,000 farmers using deep placement of fertiliser increased yields by 10-15% while reducing fertiliser consumption by up to 30%.

Seeing is believing: demonstrations by village level extension agents, 'model farmers' or agro-dealers, where a crop without fertilizer is compared to a crop that receives fertilizers, allowing farmers to see the impact.

Agro-dealer development: Training agro-dealers to make sure farmers get the right inputs at the right moment for the right price.

Optimising fertiliser use in Africa: improving efficiency and profitability of fertilizer use within the framework of ISFM practices under smallholder farming.

Low cost compost production: Using green waste such as grasses, shrubs and ground cover for farm-scale production of compost and use by farmers.

Biochar for improvement of soil quality: soil application of biochar produced from date palm and conocarpus, together with chemical fertilisers increases biomass production by 19-29%.}

Soil amendment boosts forage production: Soil application of inorganic amendment at deficit irrigation more than doubles maize forage production.

the agricultural sector, either through employment or starting their own businesses. In addition, agriculture is seen as a difficult way to make a living with low returns for the effort and the youth generally prefer jobs that bring in a high daily income and are more oriented to information and communication technology.

However if agriculture can be seen to make money and be profitable, then it becomes more attractive to youth as a way to earn a living. For instance one youth group in Kenya has successfully applied for a loan to purchase modern farming equipment for their cabbage farming business allowing them to improve the running of their agribusiness. Another youth group, also in Kenya, have focused on tomatoes, with sales of the tomatoes not only boosting the family income but also being used to reinvest in successive cropping seasons. The successful sales have ensured the level of interest of the youth in farming has been maintained.

Some of our work on agribusiness clusters (IFDC, INBAR, AVRDC)

2Scale: builds networks that connect farmers, buyers, and intermediaries enabling them to create and grow new businesses. It provides technical assistance and brokers partnerships with financial institutions and business support services.

Competitive agricultural systems and enterprises (CASE) model: strengthens the capacity of smallholder farmer-producers and nearby small- and medium- enterprises to develop a competitive environment in order to produce a commodity/product for a targeted market and to overcome the risks and other barriers related to further market integration.

Promoting bamboo small and medium enterprise development: by linking bamboo farmers, producers and the market to develop a functioning value chain

Improving income and nutrition through vegetable-based farming and food systems (VINESA): Through the use of 'best practice hubs' and using a value chain approach, unemployed youth are exposed to business thinking and equipped with skills to target specific, high-end market opportunities.

The number of people who are food insecure has increased because food production has fallen behind population growth in the past two decades. Some 13 million people are at crisis levels of food insecurity, due largely to scarcity of food caused by very low productivity and low incomes. With food scarcity, a large part of the population become malnourished, but even where there is access to food the population may be malnourished due to imbalanced diets. Those without sufficient food are undernourished and have weakened immune systems; undernourished children may be stunted with impaired cognitive development. A lack of micro-nutrients in particular can be a cause of undernourishment.

AIRCA is uniquely positioned to focus on non-staple crops and commodities, such as fruits, vegetables and livestock. These crops and commodities have not received significant attention, but this is changing as they are often more nutritious than staple crops. Furthermore, they provide more value and therefore income to the farmers growing them. It is often women that grow or raise them. Traditional African vegetables, for example, are almost uniquely grown by women and can provide a family with year-round nutrition. Growing them is scale-neutral, allowing farmers with small plots to generate income of up to five times that of staples grown on a similar area.

During the last few decades attempts have been made to address the intertwined problems of growing poverty and land degradation around the Lake Victoria Basin. Many of the projects were top-down technical approaches, which failed to have any significant lasting impact on the ground due to a combination of weak extension and insufficient attention to the needs at the grassroots level. In contrast, there is growing and encouraging community-based development, based on groups that are engaged in a common economic activity and who come together to share experiences and to solve common problems. Such self-help groups already exist in East Africa and are mostly women's groups, who come together with the intention of boosting their bargaining power when marketing their produce and services e.g. fruit tree farmers, poultry farmers, beekeepers. Current agribusiness cluster work has produced viable returns with

private firms from the small-scale to the multinational buying farm produce or selling agricultural inputs to the agribusiness clusters.

3. Main lessons from previous projects

Community-based development and institution building should be part and parcel of future interventions in the Lake Victoria Basin. The experiences described above must be shared in ways that influence future project planning. A key lesson for any project relates to gender, requiring women-focused agribusiness clusters so that women can be empowered and overcome exclusion from the male dominated decision-making agribusiness. Agribusiness clusters can give women earning power and thus economic equity. Firstly, use of a self-help approach played a major role in this and will no doubt feature strongly in the future. Secondly, the youth forms the largest group of the unemployed and agriculture is still the major source of future employment. In some areas, youth are most affected by HIV/AIDS, which is widespread in other parts of the Basin. Thirdly, repeated feedback loops and mutual learning from neighbouring districts can bring much valuable exposure, knowledge and motivation to adopt innovations in areas with similar agro-ecological zones. Fourthly, institutional building is potentially the most valuable lesson for other communities, a vital element of which is strong leadership from the community and stakeholders.

4. Why AIRCA

The seven AIRCA members, namely AVRDC (the World Vegetable Center), CAB International (CABI), Crops for the Future (CFF), the International Center for Biosaline Agriculture (ICBA), the International Center for Insect Physiology and Ecology (icipe), the International Fertilizer Development Center (IFDC) and the International Network for Bamboo and Rattan (INBAR), have extensive experience and presence in the region and will combine their strengths to deliver the project. AIRCA has the capability and track record to address complex problems at a broad geographic scale across several sectors, including across boundaries, to increase income and improve nutrition in a sustainable way. The two other AIRCA members, CATIE and ICIMOD, will provide guidance of working across landscapes.

Given the range of issues that women and youth are facing in the Lake Victoria Basin, AIRCA has acknowledged that any member on their own will have limited impact. The AIRCA members will make the vast set of technologies that collectively make up the set of input categories available as input packages, comprised of best-bet practices with immediate and meaningful impact on the ground. Best practices and lessons learnt from around the globe will be used to ensure a coordinated approach towards any agribusiness cluster.

AIRCA's recent and current work is highlighted in boxes throughout the document, outlining our on the ground development work, supported by applied research into current problems identified through the development work. We focus on high quality inputs that can be used in agricultural sectors beyond the staples such as horticulture, livestock and forests. All AIRCA members focus on putting

Some of our work in energy (INBAR, ICBA)

Bamboo as sustainable biomass energy:

Establishment and sustainable management of bamboo, through improved efficiency of biomass energy production and utilization and commercializing bamboo firewood, charcoal, briquette and improved stoves

Tree-based biomass energy: Production of tree-based biomass-energy on highly marginalized areas for sustainable energy production.

Some of our work in knowledge management/ICT (CABI)

Plantwise: Networks of plant health clinics within national plant health systems deliver appropriate, affordable and effective advice to smallholder farmers on any crop or plant health problem. Plant doctors provide a diagnosis and advice directly to farmers on how to treat the problem.

Africa Soil Health Consortium: Synthesis and dissemination of up-to-date knowledge on integrated soil fertility management to drive increased productivity in smallholder farms.

Delivery of agricultural advice through mobile technology: Partnerships are created with mobile value-added service providers to provide pest and disease information to farmers to bridge the knowledge gap in rural areas. This enables farmers to make informed decisions throughout the crop cycle

research into use, and have a unique brokerage and bridging role between public, NGO, community level organisations, business and private sector partners bringing them together to bring about sustainable change. Partnerships at ground level are essential to AIRCA members work, as is working with existing public sector partners such as the LVMEP, ASARECA, EAC and existing initiatives including the Nile Basin Initiative, CRP Humid Tropics Innovation Platforms, and other CGIAR projects.

5. Our approach

Our framework approach centres around establishing agribusiness clusters as the main intervention point (figure 1). There will be four key stages:

- 1 Identify concrete **market opportunities** for women and youth, so they can increase their income and improve nutrition.
- 2 Establish **agribusiness clusters** for women and youth in areas identified as facing some of the key challenges in the Lake Victoria Basin.
- 3 Work with these clusters to identify and deliver **input packages** that are most appropriate for the women and youth groups, based on available AIRCA experience, while bringing in other partners as appropriate.
- 4 As the framework approach is tested and refined, **extend the number and geography** of women and youth engaged in agribusiness clusters throughout the Basin area, and beyond, increasing the number of women and youth who have increased market access.

Some of our work in water and land management (ICBA, INBAR)

Integrated water resources: Integration of resource-conserving technologies and practices contribute to water resources management and efficiency, particularly for forage and vegetable production

Sustainable land rehabilitation for livelihoods: land use planning and the use of bamboo plantations to rehabilitate degraded land, and products for income generation and employment

Low cost biochar production technology: Small-scale biochar production using low cost, energy efficient stove improves land quality, leading to better crop production.

Stage 1 will form the scoping study at the start of the work, working with women and youth to identify the market opportunities that they want to pursue, where there is a viable business opportunity and where AIRCA and its partners have the necessary input packages.

Following on from this stage, stages 2 and 3 will initially be run as a pilot phase to test and refine the agribusiness approach. Lessons learnt, both positive and negative, will be incorporated into the approach to improve the way AIRCA develops and supports the agribusiness clusters.

Once the first clusters are self-sustaining, the approach will be scaled out through stage 4,

with further agribusiness clusters being established and provided the necessary input packages to support their chosen agribusiness. This approach allows an initial small scale approach to be repeated in many different geographies across the Lake Victoria Basin.

Inputs: the entry point for this concerted and harmonized effort by the AIRCA centres. Seven input categories have been identified around which most, if not all, of the AIRCA centres work together: integrated pest management, fertilizers, water, energy, seed, knowledge management/ICT and land. Collectively, the AIRCA centres have a wealth of skills, experience and expertise when it comes to implementing these inputs for the benefit of women and youth. To further harmonize and buttress the vast set of technologies that collectively make up the set of input categories, the AIRCA centres will make them available as input packages, comprised of best-bet practices with immediate and meaningful impact on the ground.

Agribusiness clusters: making the input packages work for women and young farmers. All AIRCA centres have vast experience in training, while some are champions in implementing and developing agribusiness clusters, a term originally coined by IFDC. Agribusiness clusters are functional units, comprised of farmers, but also business support services, processors, input

suppliers, and financial and credit suppliers. AIRCA will specifically target women and youth to increase their participation in and benefit from farming, making it a more attractive prospect for them to invest their time in. Using the input packages as an essential entry point, agribusiness clusters will be strategically implemented for optimal training of key players on how best to use these input packages. At this stage, building of partnerships to complement the skills of the AIRCA centres will be essential, as well as properly organized feedback loops and a clear buy-in from the private sector to make our intervention sustainable.

Market access: a ‘wins’ situation: women and youth, income and nutrition on a sustainable basis. The AIRCA centres are uniquely placed to target women and youth. Many of our input categories are applied to agricultural sectors beyond staple crops, such as horticulture, livestock and forests. These areas often have a relatively higher potential to generate income than staples, are clear drivers to increase nutritional status and are firmly in the domain of women in the Lake Victoria Basin. Also, precisely because they are relatively high income-earning areas, we are convinced they will entice the many unemployed youth in the region to take up farming as a business.

In essence, we will create and enhance market access for women and youth, targeting agricultural sectors yielding high income and better nutrition, by leveraging our combined strengths in input packages through agribusiness clusters.

6. Examples for promising input packages

The success of this project will lie in matching capacity gaps among all relevant stakeholder groups (women and youth, traders and processors, input providers, extension services, etc.) with promising and proven input packages developed by AIRCA members and their partners. Combining their synergies in input packages will result in greater impact for smallholder farmers, particularly if combined with the most appropriate and efficient dissemination methods and business models. Some examples of possible input packages are described below to demonstrate how they will work, but the exact input packages that will be implemented will be driven by the women and youth involved in the agribusiness clusters and decided on during Stage 1.

6.1 Example 1: Fruit and vegetables

In the Lake Victoria Basin, lack of production and consumption of vegetables and fruits is of great concern, especially those with a high nutrition value. A proposed input is to provide high-quality seeds/seedlings of highly nutritious and marketable vegetables and fruits (e.g. amaranth, African eggplant, guava) to the agribusiness clusters, based on sound market demand.

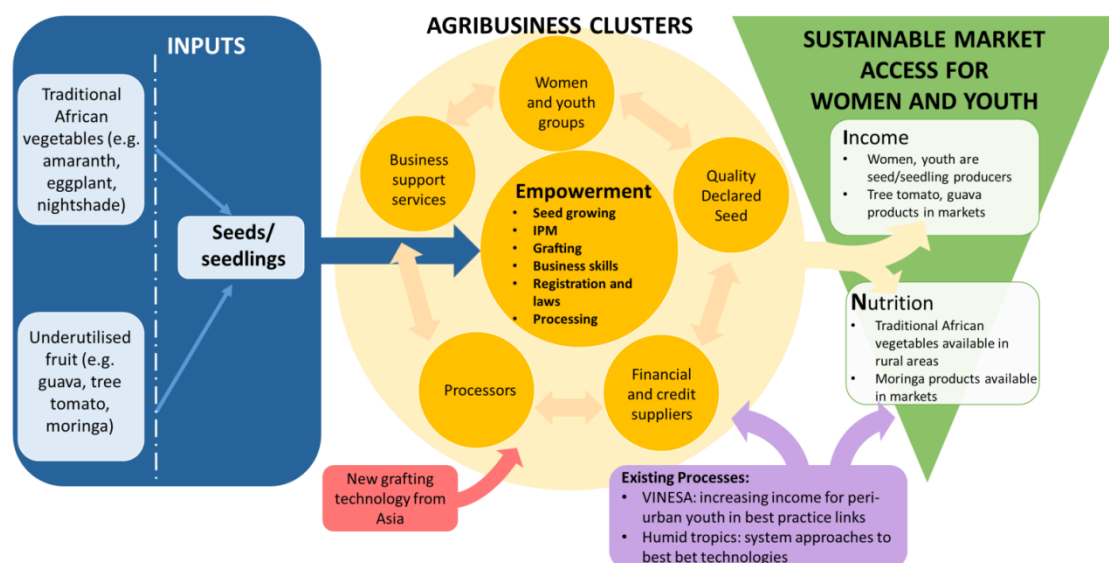


Figure 2: Example of framework approach for vegetables and fruits

Training and capacity building will be provided not only in technical on-farm and processing skills, but also and also in essential business and entrepreneurial skills to enable women and youth to take high-quality and processed products to the market. Links with current projects, finance providers, existing processors etc. will be brokered by the AIRCA partners.

6.2 Example 2: Dairy goats and cows

Productivity of smallholder livestock farmers in Africa is constrained by several factors including the absence of sustainable sources of quality forage. Other limiting factors include poor breeding stocks and lack of skills in stock holding management.

AIRCA members will focus on three input packages to improved forage production and processing: fertilisers, seeds and integrated pest management. Improved forage varieties will be introduced and the women and youth that are part of the agribusiness cluster will be given training in growing these varieties as well as processing of the forage. AIRCA members will broker links with other partners with skills in breeding stock development, dairy management and processing, as well as those with business skills, credit facilities and enterprise management. Through this process, women and youth will be able to take high value forage and milk products to market, increasing access to highly nutritious products for consumers.

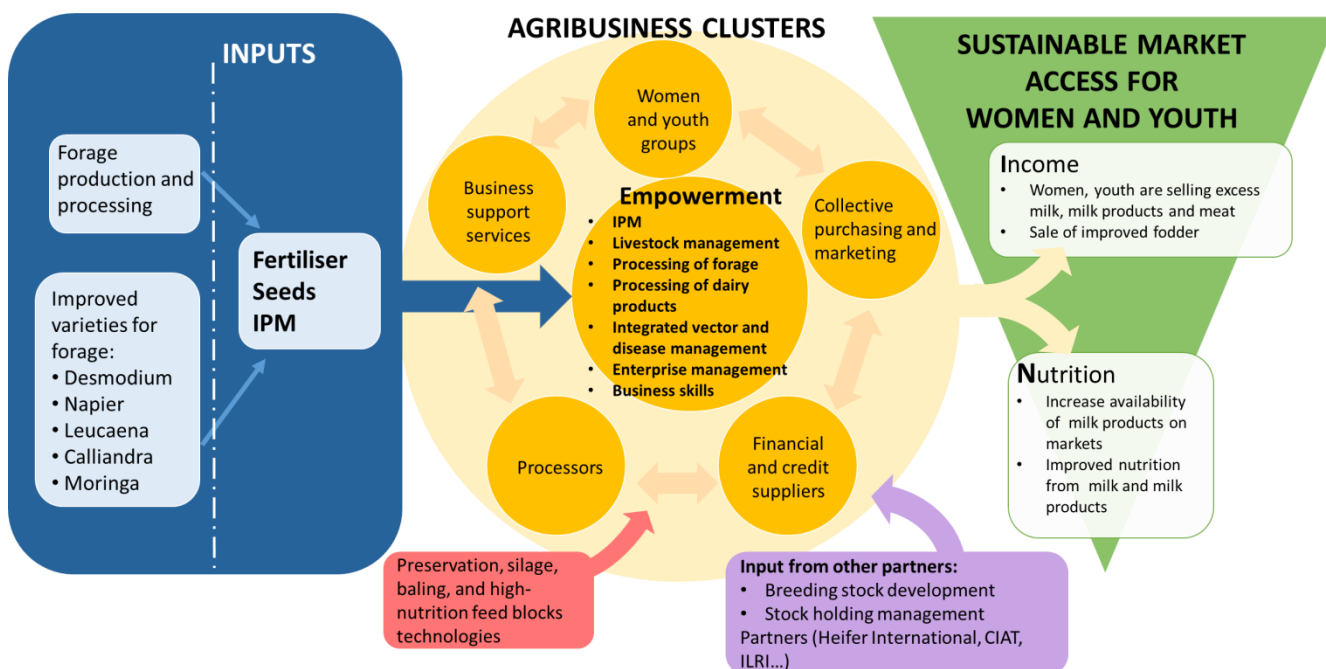


Figure 3: Example for framework approach for dairy goats and cows

6.3 Example 3: Sustainable firewood and biochar

Sustainable energy is an issue affecting many households in the Lake Victoria Basin. Common sources of energy are firewood and charcoal, and the excessive collection of wood leads to land degradation and a scarcity of raw materials. Women and youth suffer from air pollution from family cooking by using poor quality firewood and charcoal.

AIRCA members have identified synergies in the input areas of household biomass energy, fertiliser and land management, where training in sustainable plantation management, especially bamboo, can create a stable fuelwood source. In addition, processed bamboo creates a value-added product that can be taken to market, as well as an alternative fertiliser source. Together with essential agribusiness cluster partners, AIRCA members will provide training on how to leverage these opportunities. In particular, partners with improved stoves and bamboo processing techniques will join the agribusiness clusters so that women and youth will be

empowered to market their own seedlings, bamboo handicrafts and biochar with their own stoves as a complete product.

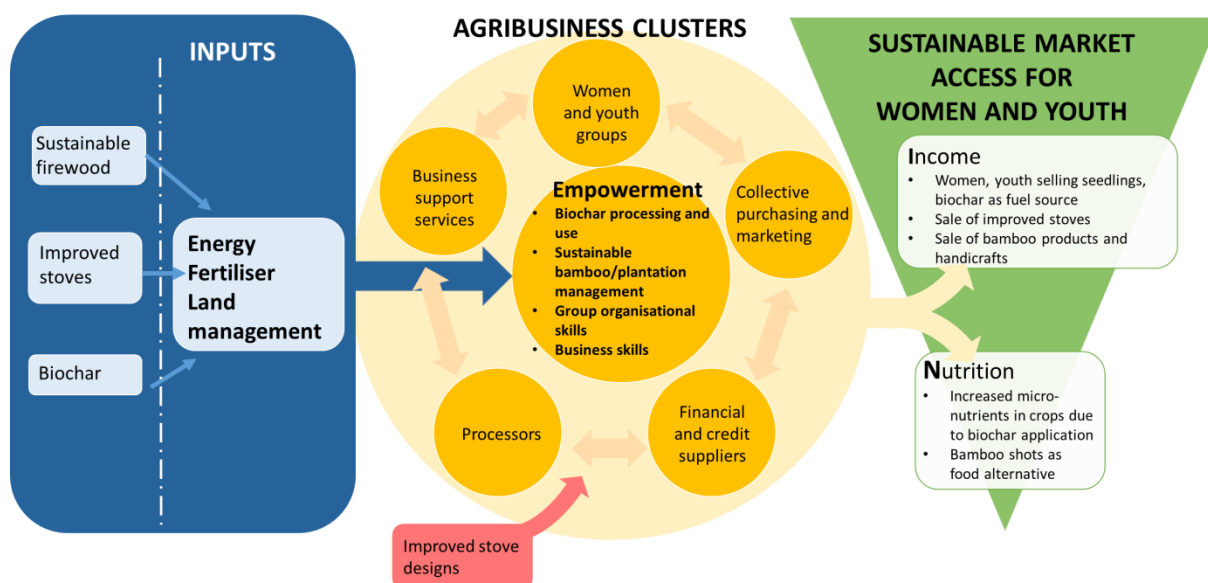


Figure 4: Example for framework approach in sustainable firewood and biochar

7. Timescale and budget:

US Dollars	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Objective 1: identification of market opportunities for women and youth	500,000	250,000	200,000	200,000	180,000	1,330,000
Objective 2: development and customization of input packages	500,000	300,000	200,000	0	0	1,000,000
Objective 3: create, support and facilitate agribusiness clusters	500,000	1,500,000	2,500,000	2,500,000	2,500,000	9,500,000
Objective 4: taking interventions to scale	0	0	3,000,000	3,000,000	3,000,000	9,000,000
Project management and M&E	300,000	410,000	1,180,000	1,140,000	1,136,000	4,166,000
Total	1,800,000	2,460,000	7,080,000	6,840,000	6,816,000	24,996,000

The project will run over a period of 5 years in the 5 target countries.

Annex 1: Logical framework

Goal: 250,000 women and youth with 25% increase in income and 1,000,000 consumers with improved access to more nutritious food.		
Overall Objective: creation and enhancement of market access for women and youth to increase income and improve nutrition		
Objective 1: identify market opportunities for women and youth	Outcome 1: target markets are shared with agribusiness clusters	
Activity 1: sectorial market analysis	Outputs: <ul style="list-style-type: none"> ▪ market study report for different inputs, products and regions, with a focus on opportunities for increased income and nutrition ▪ partners identified 	Indicative partners: <ul style="list-style-type: none"> ▪ community-based organizations ▪ trade bodies: Fresh Produce Exporters Associations of Kenya (FPEAK), Horticulture Council of Africa (HCA), Smallholder Dairy Commercial Program Southern Nyanza, Tanzania Horticultural Association (TAHA) ▪ projects: Community Development Project, Program for Rural Outreach for Financial Innovations and Technologies (PROFIT)
Activity 2: identify high impact intervention sites and target markets	Output: at least 3 markets and 3 sites identified per country with high potential for income and nutrition	
Objective 2: development and customization of input packages (IPM, fertilizer, energy, seed, knowledge/ ICT, land management)	Outcome 2: women and youth adopt the new input packages	
Activity 1: collect and catalogue best-bet input packages	Output: inventory of best-bet practices	Indicative partners: <ul style="list-style-type: none"> ▪ national bodies: various ministries, extension services ▪ non-governmental bodies and projects: LVEMP ▪ regional bodies: ASARECA, EAC, LVBC ▪ research partners: NARS, CGIAR centers, e.g. CRP Humid Tropics, the World Fish Center, ILRI
Activity 2: combine input packages	Output: 7 input packages that combine the various expertise of AIRCA members	
Activity 3: customise input packages	Output: 7 input packages that are tailored to local demands and conditions	
Objective 3: create, support and facilitate agribusiness clusters	Outcome 3: agribusiness clusters result in improved market access	

Activity 1: identify and link partners with the agribusiness clusters	Output: partners, both public and private, incorporated in functioning agribusiness clusters	Indicative partners: <ul style="list-style-type: none"> ▪ national agricultural extension services ▪ non-governmental bodies and community-based organizations: Heifer International, Kenya Dairy Goat Association ▪ private sector: credit providers, input suppliers, processors, transporters
Activity 2: training on customized input packages	Output: input packages used by agribusiness clusters	
Activity 3: brokerage linkages between women and youth, and the markets	Output: women and youth incorporated in functioning agribusiness clusters	
Objective 4: taking interventions to scale	Outcome 4: functional agribusiness clusters increased in numbers and size	
Activity 1: enhance existing clusters' capacities (markets and geographical coverage)	Output: <ul style="list-style-type: none"> ▪ new or larger opportunities identified for existing clusters ▪ partnerships implemented with large scale partners 	Indicative partners: <ul style="list-style-type: none"> ▪ national, regional and continental bodies: ASARECA, EAC, FARA, national governments and ministries, UN ▪ private sector ▪ policy makers
Activity 2: replication of successful clusters	Output: <ul style="list-style-type: none"> ▪ key drivers to successful agribusiness clusters identified and communicated ▪ new partners engaged to replicate agribusiness clusters 	
Activity 3: improve institutional environment	Outputs: <ul style="list-style-type: none"> ▪ institutional constraints identified and communicated to policy makers ▪ linkages with national, regional, continental partners fostered 	

Annex 2: AIRCA - The Association of International Research and Development Centers for Agriculture

The need for integrated action to deliver sustainable agricultural intensification at the landscape scale has stimulated in 2012 the formation of the Association of International Research and Development Centres for Agriculture (AIRCA, www.airca.org), a nine-member alliance focused on increasing food security by supporting smallholder agriculture and rural enterprise within healthy, sustainable and climate-smart landscapes.

Supported by more than 60 member countries comprising over 70% of the world's population, AIRCA members have activities in all major geographic regions and ecosystem types. All have a proven track record of research, development and implementation, working closely with farmers, extension systems, national research institutes, non-governmental organizations (NGOs) and the private sector across a wide range of crops and ecosystems.

Through sharing AIRCA's knowledge and experience in creating healthy landscapes, we seek to raise awareness of the benefits of landscape approaches among potential stakeholders in the agricultural and environmental sectors. We make the following recommendations to increase agricultural productivity in a responsible and sustainable manner, while also achieving healthy development at the landscape level:

- **Scaling out** of integrated management approaches to seed selection, soil fertility, water utilization, agronomy and pest management and preserving and utilizing crop diversity, in order to arrive at crop selections, cropping systems and practices of land management which are balanced and optimized in the context of the local environment and needs for income, food and nutritional security.
- **Capacity strengthening** at local and regional levels to improve productivity, market access and landscape management in an inclusive manner by involving women, young people, indigenous communities and marginalized groups, and incorporating traditional knowledge.
- **Policy development** and implementation at local, national and regional levels to capture the economic value of outputs from landscapes, but also to balance these against the long-term values of ecosystem services, biodiversity and interventions at the landscape scale.

To achieve these aims and improve the health of humans, plants, animals and landscapes in an integrated manner, a broad range of core competencies are required. We encourage the creation of innovative funding mechanisms that will stimulate and facilitate the formation of integrated partnerships between research and development organizations, countries and regional networks in order to deliver practical solutions with impact at the necessary scale, the capacity to sustain these interventions over time, and the development of sound policy to underpin them.

The founding members of AIRCA are:



AVRDC - The World Vegetable Center

Alleviates poverty and malnutrition in the developing world through the increased production and consumption of nutritious and health-promoting vegetables.



CAB International (CABI)

Improves people's lives by providing information and applying scientific expertise to solve problems in agriculture and the environment.



Tropical Agricultural Research and Higher Education Center (CATIE)

Specializes in agriculture and natural resources, combining research, education and outreach to provide innovative solutions for sustainable development.



Crops for the Future (CFF)

Contributes to sustainable agriculture and food systems by enabling greater use of underutilised crops through research, capacity development and policy advocacy.



International Center for Biosaline Agriculture (ICBA)

Working in partnership to deliver agricultural and water scarcity solutions in marginal environments.



International Centre for Integrated Mountain Development (ICIMOD)

Enables sustainable and resilient mountain development for improved and equitable livelihoods through knowledge and regional cooperation, for improved well-being of men, women, and children of the greater Himalayas in a healthy mountain environment.



African Insect Science for Food and Health (icipe)

Helps alleviate poverty, ensure food security and improve the overall health status of people in the tropics by developing and extending management tools and strategies for harmful and useful arthropods, while preserving the natural resource base through research and capacity building.



International Fertilizer Development Center (IFDC)

Enables smallholder farmers in developing countries to increase agricultural productivity, generate economic growth and practice environmental stewardship by enhancing their ability to manage mineral and organic fertilizers responsibly and participate profitably in input and output markets.



International Network for Bamboo and Rattan (INBAR)

Improves the well-being of the producers and users of bamboo and rattan within the context of a sustainable bamboo and rattan resource base.