

INTEGRATED TUJIINUE TENA PROJECT (ITTP) IMPLEMENTATION IN MERU COUNTY, KENYA, AFRICA.





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BACKGROUND:

Smallholder farmers play a key role in addressing the challenges related to climate change, food security and poverty. Majority of smallholder farmers who constitute 65% of the Kenya's labor force are unable to embrace the opportunities presented by the changing economic and demographic landscape triggered by global transition to low-carbon, climate-resilient and economic development trajectory.

With the advent of the novel Corona Virus and shrinking or unpredictable market prices for most agricultural produce, small-scale farmers had little or no option other than embrace the enterprises that promise an income stream with low risk, low capital input, ready market and friendly to the environment.

Tujiinue Tena project, dubbed “building back better” is an approach driven by multiple governmental and non-state actors to mobilize funding for post disaster recovery. The aim is to reduce vulnerability of communities to future disasters by building resilience to address social, economic and physiological catastrophes and shocks.

The Project, under the auspices of PACJA was mooted and piloted in semi-arid Northern Meru region with future plans of scaling it up to other parts of Kenya and Countries in Africa. In the recent past, the region in question has experienced erratic rainfall patterns occasioned by changing climatic conditions. Coupled with the adverse effects of Covid 19, the region's economy has been completely destabilized.

PROJECT GOAL:

To diversify farm income streams in the *Tujiinue Tena* Project through production of drought tolerant crops, apiculture and ecotourism for enhanced resilience to climate change and recovery from Covid-19 pandemic.

OBJECTIVES:

- 1) To support at least 4500 *Tujiinue Tena* farmers to initiate drought tolerant crops and apiculture in order to diversify farm income and conserve the environment through an enhanced agribusiness model
- 2) To reduce human- wildlife conflict in areas bordering National Parks and conservancies by creating a beehive buffer zone to keep wildlife from encroaching farmlands, destroying crops and injuring or killing people.
- 3) To interest and support youth to engage in ecotourism for income generation and job creation stream of *Tujiinue Tena* project.



- 4) To enhance a scalable public-private partnership business model that will enhance adaptive capacity of communities affected by climate change and covid-19 pandemic.

PROJECT IMPLEMENTATION:

Since inception of the project in the last quarter of year 2019, there has been a myriad of activities in its implementation as follows:

i). Community participation:

The science of community participation dictates involvement of people in a community in projects to solve their own problems. Essentially people cannot be forced to ‘participate’ in projects that affect their lives but should be given the opportunity where possible. This is held to be a basic human right and a fundamental principle of democracy.

Tujiinue Tena project mobilized the community from the household level to participate in important decisions regarding the project activities. Community opinion leaders and gate keepers were engaged in dialogues which culminated in community wide sensitization meetings for complete buy in of the project.

The sensitization sessions involved brainstorming on appropriate crops or enterprises suited to various agro ecological zones in the envisaged project area. Discussions on suitability essentially, were in respect to rainfall patterns, soils types, profitability, payback period, drought and pest resistance and market availability.

Community meetings were avenues for selecting project volunteers or catchment coordinators who act as coordinators of project functions within their community. The selection criteria was set openly in community meetings and included:

- i). Persons with Integrity
- ii). Residents of the area
- iii). Respectable members of the community
- iv). Literate with basic formal education
- v). Spirit of volunteerism and service to the community.

The functions and responsibilities of the catchment coordinators are:

- a). To mobilize community members to attend community meetings/dialogues
- b). Register or recruit farmers into the project
- c). Distribute or issue farm inputs to the farmers
- d). Aggregate farm produce and make payments to farmers
- e). Resource mobilize/identify community assets e.g. stores/office outlets



- f). Conduct community needs assessments
- g). Monitoring the project progress and reporting

Notably, the process culminated in selection of the catchment coordinators as follows:

Name	Catchment area	Contact
Jackson Karere	Kanuni	+254 702 617 066
Festus Mutethia	Akachiu	+254 708 777 110
Loise Gatwiri	Murera	+254 743 319 455
Jackson Muriira	Athiru Gaiti	+254 712 364 569
John Mwendia	Athiru Gaiti	+254 703 879 058

Upon successful conduct, supervision, monitoring and submission of monthly reports, the Catchment coordinators are remunerated with a monthly stipend of Kenya shillings seven thousand five hundred (7500) as agreed in their terms of engagement.

Every catchment area has an operational community information and resource center, which also serves as a temporary storage facility for aggregation of produce from the farms. Aggregation involves weighing, labelling and re packing of the produce in appropriate containers according to standards set by the prospective buyer.

ii). Enterprise selection and Implementation

Selection of community enterprises for implementation depends on the suitability, profitability, adaptability to climatic conditions, tolerance to pests and diseases, payback period and availability of the market among other factors. Through consultations with the community and opinion shapers within the community, the following enterprises were selected and adopted for implementation:

a. Sunflower Production:

Sunflower is a hardy oil crop suitable in arable and semi arable conditions. It requires low rainfall of 450 mm per year and has minimum nutrients requirement. Essentially, the crop performs well under drought conditions especially in the marginal areas. The plant is extremely adaptable to tropical environmental conditions with altitude range of sea level to 2500 M above sea level.

The crop requires all day sunlight for growth but is sensitivity to high soil temperatures can lead to erratic plant density during emergence. The crop’s short maturity cycle (three months), drought tolerance, low initial cost and high market value makes it a popular and profitable venture among farmers. It is a major oil crop hence a source of edible vegetable oil thus boosting people’s food security and nutritional needs. Other uses of sunflower include industrial manufacture of soap. Sunflower can be used together with linseed oil for manufacture of paints and varnish. The residual sunflower cake and seed heads are used for animal feed manufacture. At the farm level, the crop residues are used a source of fuel for cooking and lighting.

Under the auspices of PACJA, Sunflower growing was piloted in lower belt of Meru North, which is ecologically suitable for the crop. In the second half of year 2020, Sunflower farming under Tujiiinue



Tena project was embraced by 3000 farmers who cultivated 5000 acres of land and grew sunflower in the in the last half of the year 2020.

The partnership between Pan African Climate Justice Alliance and BIDCO Africa, Africa a leading edible oil processor, assured farmers of ready market, thus completing the entire value-chain of sunflower. The project, though in its infancy was a great success in that it saw of over two hundred (200) tons of sunflower harvested in a single season. Sixty (60) tons of the produce were delivered to BIDCO Africa while internal trade among farmers consumed forty (40) tons as livestock feeds. Approximately hundred (100) tons were consumed by upcoming Cottage Industries that locally process sunflower to edible oils.

b. Sorghum cultivation:

Sorghum is an important food security crop especially in semi-arid lands of Kenya. It is adapted to a wide range of agro-ecological zones. Most sorghum varieties are grown at altitudes of less than 1500 m above sea level. However, there are varieties suitable for up to 2400 Meters above Sea Level. It requires rainfall of 250-400 mm per annum during the growing season. Most dryland sorghum cultivators are those that thrive best in areas with a small range of diurnal temperatures; where the day and night temperatures do not differ greatly. Sorghum does best in wide range of soils including sandy, clay and loamy ones with medium fertile rates. Sorghum has a potential of yielding between 2 to 5 tons per hectare under good management practices.



Photo 8 & 9: A healthy sorghum crop growing in the farm as a Young Lady inspects her crop. Tujiinue Tena seeks to empower and build resilience of women at the center of climate change crisis.

Sorghum is a drought tolerant and fast growing crop, which requires low initial cost outlay. It requires less amount of rainfall than alternative staple crop such as maize. It has a short life cycle of three to four months hence has ability to escape the adverse effects of low erratic rainfall and subsequent drought.

Therefore, it is a suitable enterprise for farm income diversification and promotion of biodiversity at the farm level. It is an effective fallback plan for farmers in the event of other crops failure.

Moreover, sorghum production ensures food and feed security to the community because of its multiple uses. Traditionally, sorghum was ground and used for making of gruel (special porridge for lactating mothers). The grains are pounded with a mortar and pestle for preparation of a special diet commonly known as “muthikore” in local dialect.

Nevertheless, the demand for sorghum in the local beer industry is insatiable. PACJA established a market linkage and partnership with East African Breweries Limited (EABL) on behalf of the farmers. The company secured certified seeds that were suitable to the ecological zones under Tujiinue Tena project. In the first season of year 2021, PACJA procured 3000 Kgs of seeds and distributed to farmers in their respective catchment areas. This enabled cultivation of 1500 acres under sorghum translating to more than 100 tonnes of produce in the season. 40,003 Kgs of the produce were sold to EABL while the rest of the produce was consumed locally, thereby boosting nutritional status of the



community. Other produce was used in the local cottage industry as raw materials for animal feeds and local traditional brews known as “*kilintii and maroa*” in the local dialect.

c. Apiculture (Bee keeping)

Bee keeping (Apiculture) is a livestock subsector with great potential of contributing to Kenyan’s food basket as well as foreign earnings. Apiculture is essential for small-scale farmers and resource-humble communities due to the fact that it’s completely sustainable, has better income and needs less input as compared to other agricultural enterprises. It is low in terms of initial cost outlay in that it requires low start-up capital, land and labor.

Globally, the demand for honey is insatiable. In Kenya, for instance, a kilogram of honey fetches many times a liter of oil. (That is; Ksh. 800-Ksh (8 US\$) to 1000 (10US\$) as compared to Ksh160 (US\$1.6) for a liter of petrol. The Arab market requires 20 tons’ containers of honey per month. According to the US department of Agriculture, in 2013, the country imported a paltry 3000 Kgs of honey worth US\$ 15,000 from Kenya. Indeed, fast increases in the price of honey combined with flagging global volumes spell a promising outlook for producers who can scale up their volumes.

Bee keeping enhances the environment through pollination hence increasing the crops yields and ecological regeneration. There is a direct link between honey production and environmental conservation since bees require trees for shade, nectar, pollen, propolis and shelter. On the other hand, trees and crops need bees for sexual reproduction (pollination). This link has seen most beekeepers turn into environmental conservationists in order to boost their honey yields. This is a financial incentive for maintaining the ecosystem and in the long run, results in mitigation of climate change since trees sequester carbon dioxide; thus reducing the green-house gas emissions.

Apiculture is a means of farm diversification. Honeybees need food (nectar and pollen) to survive, grow, and multiply. Thus, the provision of bee floral resources throughout different months of the year is a primary demand for bee farming. The success of a beekeeping enterprise depends on the provision of floral resources that are in bloom through different months of the year. More honey yield is realized if apiculture is established in a region with abundance of honey/ bee plants within a five-hundred-meter radius of the bee colony. Tujiiue Tena’s Sunflower/sorghum farms act as natural complement for bees. Therefore, integrating honey production in the farm will compliment other existing enterprises since there is no competition amongst the enterprises.

Recent studies have linked bees with addressing the human-wildlife conflict. Where hives are lined along the boundaries of game parks and reserves, a buffer zone is created in which elephants are prevented from accessing the farms. This has been a sustainable and long-term solution to animal-human conflict along the wildlife conservation areas. Tujiiue tena project, borrows from Dr. Lucy Kings model of bee ‘fences’ which is a cost effective, nature based solution to reconcile the elephant with people with whom they share land.



Photo 13: Distributing modern Langstroth hives to community groups. The hives facilitates harvesting of honey three times in a year.

The innovation has provided direct incentives to keep farming communities from infringing on protected areas, which would otherwise spark clashes with elephants and other native wildlife as a result of resource competition. At the beginning of year



2022, Tujiinue Tena project procured 100 hives and distribute the same to 8 groups of farmers drawn from the wild life-human conflict zones along the Meru National park border. The groups were trained on the basic Apiary management skills and have since installed the modern hives in various hotspots locations. A quick monitoring of the apiaries revealed that colonization has occurred in 80 percent of the hives. As expected, no single elephant was reported to have roamed in the in the areas hitherto identified as human – wildlife conflict zones. Needless to say, the buffers along designated wilderness areas has eradicated negative human/wildlife interaction. This nature based deterrence method successfully protected crops hence eliminating the need for poisons snares and rifles.

KEY LESSONS LEARNT:

- i) Community participation enhances ownership and sustainability of the projects. These are key ingredients for resilience building among the community members at the center of climate change crisis
- ii) Consistent funding is a prerequisite for success of the project to ensure “building back better” amidst twin crisis of Covid 19 and climate change
- iii) Futures market is a model which is ideal for agribusiness ventures because entrepreneurs are assured of a ready and steady market for the produce
- iv) Farm diversification is a sure bet for spreading the risk of crop failure as a fallback plan thus ensuring continuous income stream.

SUCCESS FACTORS OF TUJINUE TENA PROJECT

- i) Local level planning ensured community participation at project inception and implementation stages of the project
- ii) Public Private Partnerships and engagement for synergistic advantage in marketing and information sharing
- iii) Relevance of the initiatives/enterprises in context of climate change and Covid 19 pandemic

RECOMMENDED FUTURE PLANS FOR TUJINUE TENA PROJECT:

1. Digitization of operations to ensure efficiency in data collection, maintenance of data base for retrieval & reporting, real time technical advice, monitoring & evaluation, project inventory keeping and invoking youth involvement.
2. Build more Public Private Partnerships- Seek linkages and collaboration with Bee institute of Kenya, KEBs, Universities and research centers, Seed companies, Kenya Wildlife Services, Born Free Foundation, East African Breweries Limited, Bidco Africa etc.
3. Business Development- Scout for and act on fund raising opportunities e.g. GSMA innovation fund, DFCD- Dutch, FLoCCA-World Bank Group, Prosper Africa Initiative and other development partners
4. Establish Farmers’ Cooperatives- For synergistic advantage and to unlock their potential- Explore the possibility of revolving fund tapping into mobile money credit facilities.
5. Upscale the project to a new County and/or Country (suggestions of Kajiado county and/or Ethiopia). The honeymoon (pilot) is over. There is need to share the lesson and best practices.



6. Bring on board Local Implementing Partner (LIPs) as special purpose vehicle to administer the project while PACJA maintains its oversight and supervisory role. Build the capacity to tap into local initiatives/innovations
7. Explore the ideals Journey to Self-Reliance (J2SR)-Commercialize the Integrated Tujiinue Tena Project /venture in the true meaning of agribusiness/SMEs. This will be a sustainability plan for the project
8. There is need to establish a Training and demonstration farm within the communities implementing Tujiinue Tena to cascade lessons and successes of project implementation. An integrated farm of Sunflower, Sorghum Apiculture, run on ideals of climate smart and Agro ecological practices will suffice. All farmers registered in the project are due for a refresher training on crop production, record keeping, apiary management and reporting

ANNEXES:

Annex 1: Interest story from the field:

In the year 2022 (April-May long rains), Kenya experienced the worst drought in forty years' of country's history, necessity declaration of drought as a National disaster by the Government. Farmers who planted sorghum were cushioned against the biting hunger since most of the alternative crops such as maize were destroyed by biting drought at initial stages of growth. Simple economics theory postulate that 'once the price of a main good increases, the price of an alternative good increases' simultaneously. This scenario was witnessed in the Igembe south of Meru region where a kilogram of maize (main good) shot up from Ksh. 30 per Kg to Ksh 120 per Kgs. (300% increase). Consequently, the price of sorghum (alternate good) shot up from Ksh. 34 to Ksh. 70 (120% increase). There was booming business amongst farmers who had planted sorghum thereby earning extra income and ensuring food security at the household level.

Annex 2: Monitoring the Apiculture Project (Video clip)



ELIMIKA Group hives.mp4



Elimika Group members inspecting hives.mp4

Annex 3: Comparing the production of Sorghum Vis a Vis Maize crop under same ecological conditions in Athiru catchment area (Video Clip)



VIDEO-Sorghum VS
Maize in Athiru Catchment

Annex 4: Tujiinue Tena Monitoring and Evaluation Plan:



ME Plan Integrated
Tujinuu Tena Project

Annex 5: Links to Stories:

- <https://youtu.be/wISaG0Zaubc>
- <https://youtu.be/IvVR6yZaJe8>

Annex 6: Link to the project documentary:

https://drive.google.com/file/d/1TM-LBBY67ZHALQmf_nBPCbT_-2xavX0g/view?usp=sharing



Photo 15: Members of Upendo Group Elimika Group Kiolu inspect one of the hives in their apiary. The apiary set approximately two hundred meters from Meru National park border has effectively deterred stray elephants from encroaching farmlands and destroying crops.