



AGRIBUSINESS FOR THE DEVELOPMENT OF RURAL AREAS IN KENYA

BANDO PROFIT 2019 – AID 012313/02/4

Rural Community Engagement Through Market Research

The Experience of Kapluk Community

INTRODUCTION

- The first phase of the project involved reaching an agreement (MOU) with Moi University. The MOU was done in order to provide young graduate engineers with opportunities in line with ‘Bando Profit 2019’.
- Another key purpose for signing the MOU was so as to involve Moi University in the process for selecting the target community to be involved in the initiative.
- The selection of young engineers from various disciplines was done and a suitable training framework ‘modules’ was arrived at to ensure multi-disciplinary exchange of information. This would equip the trainees with the necessary skills to enable them manage agri-business activities.
- The aim of this was to train young engineers for employment in the ‘Bando Profit’ initiative and to create a dedicated group in the company able to work in a capacity building project.



PROJECT IMPLEMENTATION

Meeting The Community

- Upon engaging the Moi University team, JV Almacis proceeded to have the first engagement with members of the community. The activities carried out during this visit include a general inspection of the area and meeting with all stakeholders.
- The members of the community are currently not practicing any profitable economic activity and do not have anything linking them together.

Training


- On the other hand, training for the graduate engineers also began at the Moi University.
- JV Alma CIS started doing mapping activities to identify the land area mass under irrigation.

Soil Analysis Recommendations

- A soil analysis to determine the properties of the soil in the area was also done.



0038669


KENYA PLANT HEALTH INSPECTORATE SERVICE (KEPHIS)
 KITALE OFFICE
 P. O. Box 249, Tel: (054) 30906, 0722209502, Fax: (054) 31971 Kitale, Kenya.
 E-Mail: kenya@kephis.org

Our ref: KEPHIS/KTL/ACL/REPORTS/VoLI/644 **Date:** 16th December 2021
Your ref:
 Chepruto Cheptum
 Tel: 070721350886
BARINGO

REPORT OF ANALYSIS

The following is the analytical report of the soil sample submitted to KEPHIS Kitale analytical Chemistry Laboratory on 9th December 2021 for fertility evaluation.

Note:

- The results reported relate **only** to the sample received at the laboratory.
- This report should not be reproduced/ copied/ scanned except with the written approval of the Regional Manager.
- UV/Vis= UltraViolet- Visible Spectroscopy.
- AAS= Atomic Absorption Spectrometry.

Results Table			
Client's Identification code	-	Method Used	Date Analyzed
Laboratory code	KS210227		
pH (H ₂ O) 1:2.5	6.72	pH Meter	9/12/2021
Sodium (Na) m.e. %	1.76	Flame AAS	15/12/2021
Potassium (K) m.e. %	1.26	Flame AAS	15/12/2021
Calcium (Ca) m.e. %	5.57	Flame AAS	15/12/2021
Manganese (Mn) m.e. %	1.99	UV/Vis	16/12/2021
Available Phosphorus(P) ppm	28.46	UV/Vis	15/12/2021
Magnesium (Mg) m.e. %	2.16	UV/Vis	16/12/2021
Total Nitrogen (N %)	0.31	UV/Vis	15/12/2021
Carbon (C) %	2.64	UV/Vis	15/12/2021
Copper (ppm)	2.27	Flame AAS	16/12/2021
Iron (ppm)	66.71	Flame AAS	16/12/2021
Zinc (ppm)	16.53	Flame AAS	16/12/2021

ACL Kitale analytical report Page 1 of 2

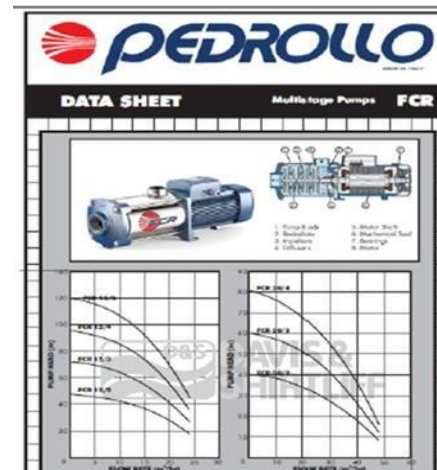
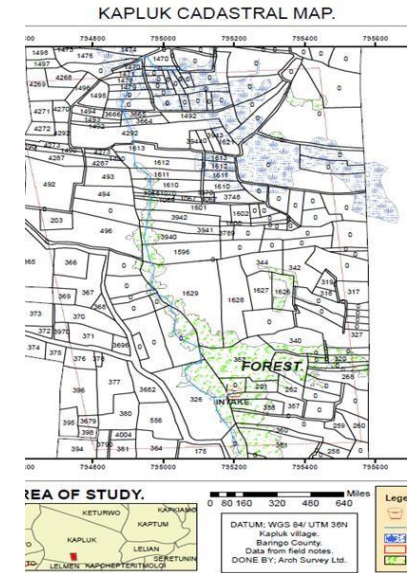
FIELD WORK/ COST INFORMATION

- The project team then proceeded to conduct a market research to determine the viability of the crops which the farmers intend to plant.
- The target markets were Kabarnet and Eldoret towns.
- With regard to the cost information, the production costs and labor costs were collected to if the farmers could afford to conduct agribusiness to repay the loan from JV Alma CIS.
- The farmers were practicing ‘barter’ trade meaning they only did farming for subsistence purposes and the produce was exchanged with other members of the community with a different product.
- It was the goal of JV Alma CIS to move the members of the community from subsistence farming to Agribusiness. In order to curb the challenge of lack of a consistent source of water, JV Alma CIS decided to install an irrigation scheme.
- Since the farmers lacked sufficient skills for farming, JV Alma CIS also decided to involve professional agricultural officers to help farmers get better yields.



CONSTRUCTION OF IRRIGATION SCHEME

- Preparation of technical documentation for design
- A design of the irrigation scheme and its bill of quantities were made to determine the cost each farmer would incur for this project.
- The idea of JV ALMACIS was to implement a ‘beyond the mentality of grants’ ideology to the farmers. As such, the farmers were educated and informed that they would be required to pay 50% of the total irrigation system cost as a loan to JV ALMACIS.
- The system consisted of a pump powered by a photovoltaic mini grid.
- The cost each farmer had to pay was directly proportional to the percentage by area mass of the total area under irrigation.
- A series of formal agreements for loan repayment were made between members of the community and JV Alma CIS. An agreement with the chief for the use of the communal stream to install the irrigation scheme was also made.



NOTES:
1. All dimensions in mm.

REVISION:

Rev	Description	By	Date

CLIENT:
JV ALMACIS SCARL
VIA PADRE U. FRASCA
CHIETI SCALO (IT)

PROJECT:
KAPLUK IRRIGATION SCHEME
BARINGO

TITLE:
BANDO PROFIT 2019
AID 012313/02/4

PART NO:

Agreement for Repayment of Irrigation System

This agreement is entered between
Mr/Mrs/Ms **SYMON TOMNO**
Phone 0757332891 on this 15th day of September, 2022
and
JV ALMACIS SCARL
The undersigned resident of Kapluk area and beneficiary of plot No. 495 of the Kapluk Irrigation scheme do solemnly hereby agree to participate in the proposed Irrigation model estimated at a budget of Kshs 4,507,402.00
On the estimated summary, JV ALMACIS will facilitate Kshs. 2,348,704 an equivalent approximate of 50% of the total cost.
Hence over above considering the size of my land of 1.01 hectares equivalent to 7.41 percent of irrigation area. In conformity I agree to repay the sum as calculated of Kshs 157,827.00
NOTE: The agreement will take place after system installation and commissioning. The first installment will be paid after the first harvest and be spread up in subsequent harvest seasons for no more than 4 harvests seasons simultaneously.

Signed by Beneficiary
Simon Tomno Sign Simon Tomno

Signed by Witness
Giorgio Di Carmine Sign Giorgio Di Carmine



Signed for and on behalf of JV ALMACIS
Piergiorgio Di Carmine Sign Piergiorgio Di Carmine

TRAINING OF THE FARMERS AND CREATION OF SELF HELP GROUP

- Before the implementation of the irrigation scheme, it was deemed necessary to train the farmers on the proper use of the irrigation scheme and better agricultural practices.
- JV Alma CIS also involved agricultural officers whose main purpose was the training of the farmers in better agricultural practices. This was done in a bid to improve the farmers yields. The head agricultural officer was Everlyne Chelimo.
- Since the farmers now have an activity in common, they decided, with the help of JV Alma CIS to form a self help group which would move members of the community from just being neighbors to a single economic unit.



 Republic of Kenya MINISTRY OF LABOUR AND SOCIAL PROTECTION STATE DEPARTMENT FOR SOCIAL PROTECTION DEPARTMENT OF SOCIAL DEVELOPMENT		
SELF HELP GROUP(SHG) <i>This is to Certify that</i>		
KIPTOLELLO	FARMERS SELF HELP GROUP	BARWESSA
KAPLUK	KABUTIEI	BARWESSA
Sub-Location / Ward	Location	Division
BARINGO NORTH	BARINGO NORTH	BARINGO
Sub-County	Constituency	County
DGSD/HC/SHG/507	9/2/2022	9/2/2022
Registration No.	Is registered with the Department of Social Development by:	
Name	Signature	Date of Registration
GEOFFREY CHELWOR		9/2/2022
County / Sub County Social Development Officer	Date of Issue	
9/2/2022	Date of Issue	
 (Kenya) VISION 2030		
<small>Note: The Contents of this Certificate should not be erased, altered or defaced in any way.</small>		

Certificate of Participation This is to certify that Simon Tomno participated in Operation and Maintenance of a Solar Pumping System held on 5th October 2022 AREAS OF COVERAGE: 1. Solar Pumping Basics 2. Components of Solar Pumping Systems 3. Operation and Maintenance of a Solar Pumping System Duration: 1 Day  Signed  Know How through experience davisandshirliff.com CP-5120
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DATA COLLECTION AND ANALYSIS

- After the implementation of the irrigation scheme, it is now possible to compare farmers production in terms of before and after basis. The analysis is aimed at providing information so that the project can be replicated either in small or large scale.
- The data collected was collected using forms. A brief summary indicating what each step (form) entails is as shown below:
 - Production before and after irrigation- This form analyzes what farmers were harvesting before the implementation of the irrigation scheme versus after its implementation.
 - Report to organize farmers to a single economic group- The members of the community did not have a single economic entity and were living as 'just neighbors' but JV Almacis moved them from this mentality into being a single economic group. The farmers proceeded to then form the Kiptolelyo Self Help Group.
 - Report on the challenges the farmers were facing before irrigation and how the challenges were reduced after installation of the irrigation system.
 - Description of the selection of the most profitable crop. In this section, farmers state that they opted for beans as it was cheaper to plant and took a shorter duration to mature.
 - Before planting, a germination test was done to determine the viability of the seeds. After seeing that the beans could be planted, ploughing of the farms began.

1. Report of the difference in productivity of harvest before and after use irrigation
 Identify on the map the plots and describe previous crops planted production status:

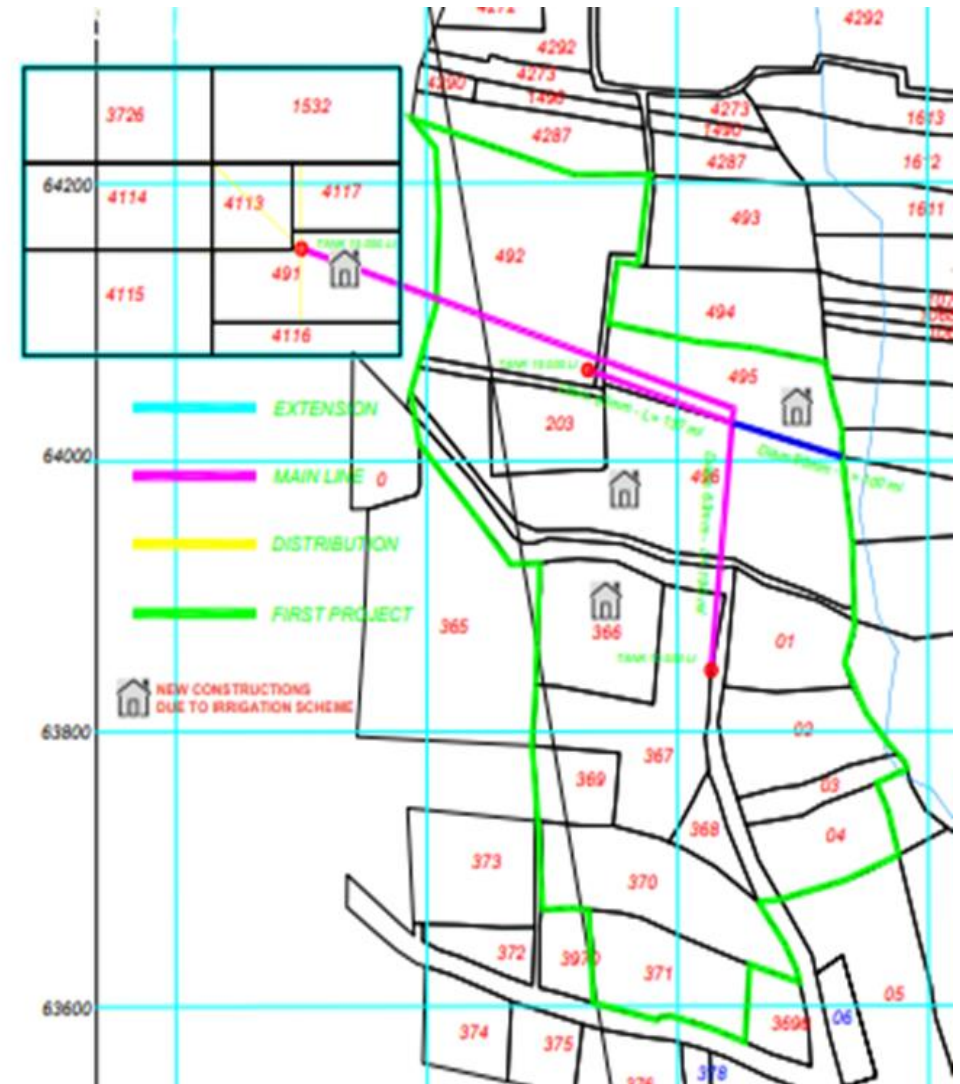
BEFORE IRRIGATION			AFTER IRRIGATION	
IMION YATOR – Plot No. 203			YATOR – Plot No. 203	
Crops	Production (Kgs)	Revenue	Crops	Production
vegetables inger millet	Self - Consumption 20kgs (Finger Millet)	No Revenue	Beans	Revenue 25480
BEFORE IRRIGATION			AFTER IRRIGATION	
Joshua, Japheth, Mary and Nancy– Plot No. 492			Joshua, Japheth, Mary and Nancy– Plot No. 492	
Crops	Production (Kgs)	Revenue	Crops	Production
inger millet cotton	Self - Consumption 30kg (Finger Millet)	400kgs cotton @ 54 ksh (21600)	Beans	Revenue 63960



IMPACT OF THE IRRIGATION SCHEME ON THE COMMUNITY

1. MIGRATION INTO THE IRRIGATION SCHEME

- The irrigation scheme has attracted more family members of the current beneficiaries of the system move to the area in search of opportunities for agribusiness.
- This is in line with the set out objectives for the creation of employment opportunities to the youth.
- This will shift the constant migration of youth to urban centers in search of employment to that of rural youth creating opportunities at home.



2. SCHOOL TRACKING

- After implementation of the irrigation scheme, farmers can now set aside a portion of land for subsistence farming. This effectively eliminates malnutrition in the community.
- The report on school tracking basically indicates how the lives of school going children has been impacted by the irrigation scheme. Access to food, better hygiene due to access of water and elimination of issues concerning school fee are some of the benefits the school going children now enjoy.
- The concept of agribusiness was also discussed with the students to shift their mentality from agribusiness as an activity which is not profitable to one that could lead to job creation.



JV ALMACIS PILOT PLOT

- In the spirit of community cohesion and interaction, JV Almacis decided to be part of the irrigation scheme by actively participating in the farming activities.
- This offered a new opportunity in terms of closer monitoring of the farmers progress by JV Alma CIS. Since some of the farmers exhibited fear when it comes to fully embracing the irrigation scheme, JV Alma CIS would act to set an example for the members of the community.
- This opportunity also helps JV Alma CIS to observe challenges that the farmers go through in the production cycle to better manage them.
- The cost of production per acre for each plot can now be measured accurately factoring in all variations.
- For the next cropping cycle, the JV Alma CIS plot will contain watermelon.
- JV ALMACIS also introduced organic fertilizers to the farmers in a bid to reduce the use of chemicals in crop production. An experimental plot has been set up to monitor the difference in production when using organic means and when using inorganic means.



Organic farming

- JV ALMACIS also introduced organic fertilizers to the farmers in a bid to reduce the use of chemicals in crop production. An experimental plot has been set up to monitor the difference in production when using organic means and when using inorganic means.

Composition	
Micro and micronutrients	
Compound	Grow Peat
Humic acids	13.7 g/l
Fulvic acids	7.6 g/l
pH	8.2
Organic matter	59%
Nitrogen	7500 mg/l
Potassium	1500 mg/l
Phosphorus	1500 mg/l
Calcium	426 mg/l
Copper	900 mg/l
Cadmium	9 mg/l
Sodium	712 mg/l
Magnesium	420 mg/l
Zinc	355 mg/l
Boron	312 mg/l
Iron	400 mg/l
Molybdenum	215 mg/l
Sulfur	250 mg/l
Magnesium	125 mg/l
Silicon	112 mg/l
Chromium	6 mg/l
Nickel	98 mg/l
Selenium	12 mg/l
Lithium	4 mg/l
Bismuth	19 mg/l
Silver	21 mg/l
Aluminium	154 mg/l
Vanadium	6 mg/l
Titanium	29 mg/l
Tungsten	11 mg/l
Lead	4 mg/l
Iodine	6 mg/l
Fluorine	2 mg/l
Yttrium	4 mg/l
Strontium	2 mg/l



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Amino acids	
Valine	68 mg/l
Glycine	76 mg/l
Leucine	83 mg/l
Threonine	19 mg/l
Serine	12 mg/l
Glutamine acid	19 mg/l
Phenylalanine	122 mg/l
Lysine	46 mg/l
Isoleucine	18 mg/l
Cysteine	14 mg/l
Proline	58 mg/l
Dihydroxyproline	41 mg/l
Triptophan	145 mg/l
Isoleucine	112 mg/l
Methionine	101 mg/l
Alanine	126 mg/l
Aspartic acid	46 mg/l
Arginine	28 mg/l

Vitamins	
A1 (Retinol)	93 mg/l
B1 (Thiamin)	44 mg/l
B2 (Riboflavin)	79 mg/l
PP (Nicotinic acid)	19 mg/l
B12	12 mg/l
C (Ascorbic acid)	39 mg/l
D3 (Ergosterol)	135 mg/l
E (Tocopherol)	88 mg/l
B9 (Folic acid)	41 mg/l
P (Biotin/panthoic)	14 mg/l
P (phyloquinone)	54 mg/l



BIO-AVAILABLE FORMS OF MACRO AND MICRO NUTRIENTS, AMINO ACIDS AND VITAMINS



Originally from Russia



SECOND CROPPING CYCLE

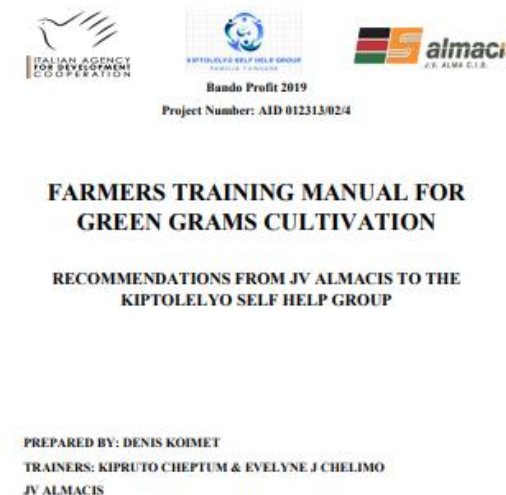
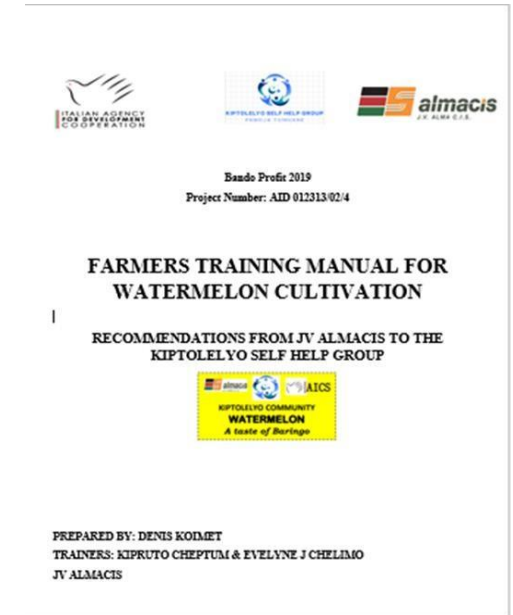
- Based on the soil analysis conducted at the beginning of the project, watermelon was suggested as the most suitable crop due to the soil pH.
- A training was done to ensure the farmers would get the maximum possible yield from the farms.
- The training document contained a general introduction indicating the different types of watermelon and green grams, optimal requirements for growing, manure application methods, sowing methods, water requirements, weeds and managing them, pests and diseases affecting both crops.

PLOUGHING ACTIVITIES

- After the training was complete, ploughing and readying of the land began. This was in preparation for the planting of watermelon and green grams.

PLANTING ACTIVITIES

- After the farms were ready, planting of the green grams and watermelon began.



FLOWERING AND BEARING OF FRUITS

- The watermelon crops are in their flowering stage with some already bearing fruit indicative of a bountiful harvest.
- By emulating the practices on the pilot plot, farmers have avoided disease and pests which could have otherwise ruined the crops.



PHASE TWO (SCALE-UP OF EXISTING SCHEME) APPROACH TO THE COMMUNITY

- Upon seeing the success and impact the irrigation scheme had on the farmers involved in phase one of the irrigation scheme, other farmers were interested in joining the scheme.
- Through the Kiptolelyo Self Help Group, the farmers requested that JV ALMA CIS incorporate them in the project.
- Upon agreeing to the terms of the engagement, the members of the community signed agreements.
- During the meeting held on the 13/4/2023, the farmers displayed their eagerness to participate in the project by already planting green grams. This they say, was a measure of their seriousness and commitment to the project.
- The activities for phase two began with the delivery of the steel tank structure, pipes and excavation for the foundation of the tank structure to be assembled on site (9/5/2023).



Agreement for Repayment of Irrigation System

This agreement is entered between
 Mr/Ms/Ms. JAMES ROTICH ID 4192360
 Phone 0729238800 on this 25/04 day of 2022
 and
 JV ALMACIS SCARL 3726

The undersigned resident of Kapluk area and beneficiary of plot No. _____ of the Kapluk Irrigation scheme do solemnly hereby agree to participate in the proposed irrigation model estimated at a budget of Kshs 1,114,900.00

Hence over above considering the size of my land of 2.5 acres equivalent to 16.1 percent of irrigation area. In conformity I agree to repay the sum as calculated of Kshs 179,823.00

NOTE:
 a) Ownership of the system will remain to JV ALMACIS until it is fully paid.
 b) Another document for handing over the system to the community will be signed
 c) The first installment will be paid after the first harvest and be spread up in subsequent harvest seasons for not more than 4 harvest seasons simultaneously.
 d) I will join the Self Help Group and will follow the stipulated guidelines.
 e) That as members of the Irrigation scheme Phase 2, we will give to JV ALMA CIS 1 acre as a pilot plot for the duration of the loan.

Signed by Beneficiary
James Rotich Sign [Signature]

Signed by Witness
Simon Rama Sign [Signature]

Signed for and on behalf of JV ALMACIS
 Piergiorgio Di Carmine Sign [Signature]

Attachments: Acknowledgement of land area and map
 Bill of Quantities
 Guidelines

ACKNOWLEDGEMENT OF LAND AREA MASS FOR FARMERS IN KIPTOLELYO, (KAPLUK) IRRIGATION SCHEME (PHASE 2)

In full realization that the acreage listed in this document is accurate, we the undersigned hereby confirm that the information stated below is true and would like the plots to be included as the phase two of the existing irrigation scheme.

NAME	PLOT NO	PLOT AREA	SIGN
491	William Chelelego	2 Acres	<u>[Signature]</u>
4116	Stanley Chelelego	1 Acre	<u>[Signature]</u>
4115	Charles Kiptoo	3 Acres	<u>[Signature]</u>
4117	Sammy Kenei	1 Acre	<u>[Signature]</u>
4114	Zacharia Kiptoo	3 Acres	<u>[Signature]</u>
3726	James Rotich	2.5 Acres	<u>[Signature]</u>
1532	Zacharia Chebii	2 Acres	<u>[Signature]</u>
4113	Eleen Kiptoo	1 Acre	<u>[Signature]</u>



HARVESTING AND SELLING OF THE PRODUCE

- For the first cropping cycle, the farmers planted beans and after their maturity, they were harvested and stored.
- The farmers decided to do an auction.
- Through the Kiptolelyo Self Help Group, the auction was advertised and all the produce from the harvest was sold.



Approach to the Market

Meeting with Spice World Kenya

- In an effort to assist the farmers, JV ALMACIS conducted a meeting with Spice World Kenya. Spice World is a leading distributor of grains, cereals and other products. This was done in a bid to link the farmers directly to the market.
- From the meeting, the conditions spice world offered to farmers was far below the expectation, hence this approach was not profitable to the farmers.



Advertisement of Beans

- After the first engagement with Spice World and in a bid to assist the farmers, JV ALMACIS and Kiptolelyo Self - Help Group decided to create their own brand and approach the market directly as seen in the pictures.
- To attract buyers from all over Kenya, an advert was put up for the sale of beans.
- The beans which were of the 'Nyota Variety' were sold at 150 KES per kg



ADVERTISEMENT! ADVERTISEMENT!!

KIPTOLELYO FARMER'S SELF HELP GROUP.

There will sale of Harvested Beans (Nyota) on **1st and 2nd February 2023** at **Kiptolelyo Stores A and B** near the farm Project as from **10:A.M**

The Price of 1kg is **Ksh 140/=** .

This is the first Patch of the sale and limited to first come First Served.



The Sample of the Beans.



VALUE CHAIN IMPROVEMENT

- In order to further market the produce, JV ALMACIS has partnered with Italian **Chef Luca Mastromattei** and **Kenya Utalii College** to prepare pickled vegetables to approach the Nairobi market, mass production of the products will begin after a steady supply of horticultural produce will be obtained from the farmers in Kapluk..
- All the vegetables used were obtained from the Kapluk project.
- Through this strategic move, JV ALMACIS seeks to establish a direct link between the farmers in Kapluk with the market in Nairobi.
- An additional advantage of the farming being done in Kapluk is that it is organic in nature.
- This means that it has a niche in the market.



**Chef
Luca
Mastromattei**



MODEL CREATION FOR FARM MANAGEMENT

From the experience gained during the Bando Profit 19, JV ALMACIS has gained the necessary skills to assist farmers in farm management with specific emphasis on cost management and the correct use of fertilizer. Below is a sample of the forms developed by JV ALMACIS to assist farmers to track costs.

JV ALMACIS has also conducted training activities in different counties using this template.

Using the information gathered, JV ALMACIS has developed a model for farm management inclusive of a solar powered system sourcing water from a borehole.

From the information gathered, a database was created to aid in the digital transformation of agricultural practices.



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J.V. ALMA C.I.S.
FORM 1.0 WEEKLY FIELD DATA COLLECTION TEMPLATE

Land Area:Acres Crop Planned:

Name	Time	No. of acres	Cost/Person (KES)	Total cost (KES)
Seedling production:				
Seeds	0:00			
Labour operations (manual): (Land clearing, weeding, spraying, etc.)				
Land clearing				
Weeding				
Spraying				
Other				

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J.V. ALMA C.I.S.

Name	Time	No. of acres	Cost/Person (KES)	Total cost (KES)
Mechanical inputs:				
Tractor land clearing				
Tractor ploughing				
Tractor harrowing				
Other				
Material inputs:				
Fertilizer				
Pesticide				
Fungicide				
Insecticide				
Water				
Sticky traps				
Other				



'FARM MANAGEMENT'

A REPORT ON PROPER FARM MANAGEMENT PRACTICES BASED ON JV ALMACIS' IRRIGATION AND AGRICULTURAL EXPERIENCE IN KENYA

RURAL COMMUNITY WATER AND IRRIGATION PRACTICES USING SOLAR POWERED SOLUTIONS

PREPARED BY: DENIS KOIMET (Civil Engineer- Capacity Building Department)
FIELD IMPLEMENTATION: KIPRUTO CHEPTUM (Agricultural Engineer / Extension Officer- Capacity Building Department)
SUPERVISED BY: PIERGIORGIO DI CARMINE (Director),
JV ALMACIS, KENYA BRANCH

PRECISION FARMING PROPOSAL

ADDRESSING CHALLENGES BY TECHNOLOGICAL INTERVENTIONS IN BARINGO COUNTY

Proposal compiled using JV ALMACIS farming experience and data collected

PREPARED BY: DENIS KOIMET
DATA COLLECTED BY: KIPRUTO CHEPTUM
SUPERVISED BY: PIERGIORGIO DI CARMINE
JV ALMACIS

PRECISION FARMING

- To improve farming activities, JV ALMA CIS has purchased several IoT equipment for soil testing and analysis to aid farmers to conduct rapid tests.
- With the help of the Capacity Building Department agronomists, farmers can receive instruction on the best crop to plant. Currently, JV ALMA CIS has activities in Nakuru, Baringo, Makueni and Kajiado counties.
- Through the manuals prepared by JV ALMA CIS, the farmers can then receive training for different crops based on the results.



Bando Profit 2019

Project Number: AID 012313/02/4

FARMERS TRAINING MANUAL FOR BEANS CULTIVATION

RECOMMENDATIONS FROM JV ALMACIS TO THE KIPTOLELYO SELF HELP GROUP

PREPARED BY: DENIS KOIMET
 TRAINERS: KIPRUTO CHEPTUM & ANN KIBET
 JV ALMACIS

PLANTING DEPTH

Seed should be placed at a depth of 10 – 15 mm.

FERTILIZATION

The optimum pH level for green bean production is around 5.8.

NITROGEN (N)

Nitrogen fertilization should be based on the results of a proper soil analysis. A total nitrogen application of 40 – 50 kgs / acre should be applied in various splits. Application of nitrogen should be done prior to planting and the remainder needs to be applied by week 4 after planting.

PHOSPHORUS (P)

All the P is applied at planting. Under normal conditions a total phosphorous application of 25-35 kg/acre is adequate. Where the phosphorus status of the soil has been built up over several years, as little as 10kg P applied per acre should be adequate. Soil analysis should be the basis of this decision however.

POTASSIUM (K)

Under normal conditions a potassium application of 40-50 kg/Acre is adequate.



Figure 1: Irrigation after fertilizer application

IRRIGATION

As with the application of fertilizer the water requirements of the bean plant are crucial to achieving maximum yields. The greatest need for water is during the flowering and pod set stages. Depending



Bando Profit 2019

Project Number: AID 012313/02/4

FARMERS TRAINING MANUAL FOR CARROTS CULTIVATION

RECOMMENDATIONS FROM JV ALMACIS TO FARMERS

PREPARED BY: DENIS KOIMET
 TRAINERS: KIPRUTO CHEPTUM & ANN KIBET
 KIBET
 JV ALMACIS

Carrots Farming

Carrots is a vegetable which is eaten raw or cooked. It is an emerging high value crop; very rich in vitamin A which is what gives the characteristic bright color and sweetness good to be used in some fruit-like soups. When grated, they can be used in cakes, carrot puddings, blended in jams and other fruits. It has a demand in both small scale use and processors like canneries and dehydration firms.



Image: [Carrots planted in Kenya Farm](#)

Ecological requirements

- Carrots does well in cool to warm areas. The roots are very sensitive to high soil temperatures.
- Deep, loose loam soils which should be well drained and with a pH of 6-6.5. Poor drained soil encourages prevalence of bacterial diseases. Heavy clay soils give low quality, malformed and twisted carrots

Varieties

Carrots varieties can be categorized into two fresh market and processing (canning) varieties. The common varieties are Nantes, Super Karada, Oshart and Chantaisy.

Planting

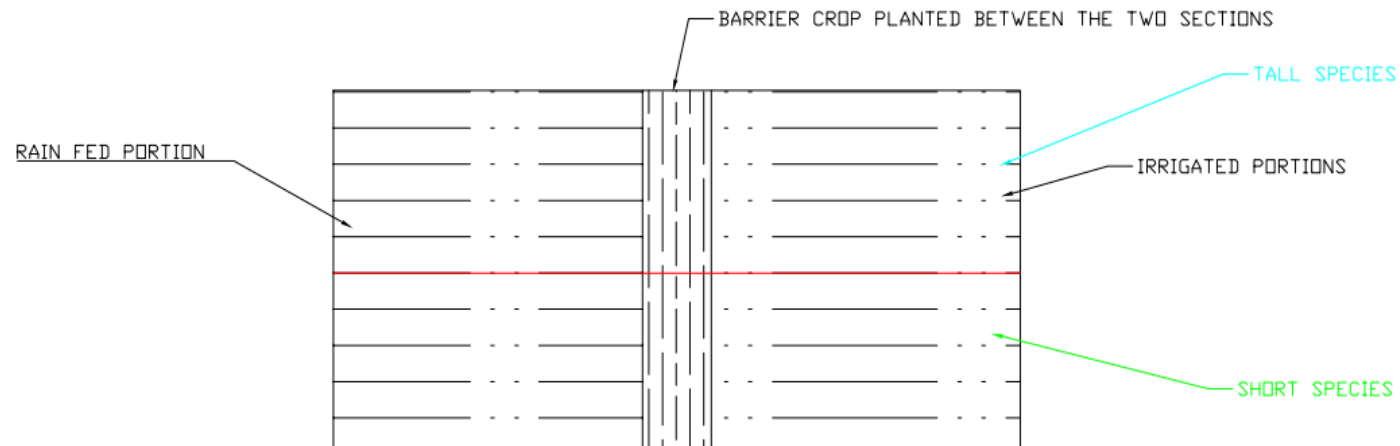
- Carrots are usually sown directly into a ready bed. To sow carrots:
- Select a bed which is fertile and crops of carrot family has not been previously grown
 - Clear any vegetation, plough and harrow to get a fine tilth
 - Make shallow drills (30cm) apart with a stick or hand

EXPERIMENTATION WITH CASTOR BEANS

- Aside from the various farming activities set-up by JV ALMA CIS in different regions of Kenya, an experimental plot has also been set up in Baringo for the farming of castor beans.
- The planting of the castor beans by JV ALMA CIS is in partnership with Italian oil firm ENI.
- Castor beans can be a suitable cash crop for farmers in the arid and semi – arid areas.
- As a control for the experiment, JV ALMACIS divided the plot into two sections (rain fed and irrigated).
- The aim of the experiment is to check the feasibility of planting castor for small – scale farmers and to develop a model for replication throughout Kenya.
- The experimentation was conducted at the onset of the rainy season.



DISTRIBUTION OF CROPS ON JV ALMACIS EXPERIMENTAL PLOT



CONCLUSION/RESULTS

In conclusion, the objectives listed in the technical proposal were all met. These objectives were:

- The construction of a solar powered irrigation scheme as well as the formation of the self-help group. *As seen in the picture, farming activities were very limited due to the lack of an irrigation scheme in the area.*
- Impacting of trainees and other technical staff by creating a ‘capacity building branch’ of the company. Eight technicians participated in the training and became Capacity Building experts. As intended in the technical proposal, **3 of them** found stable employment with a regular employment contract
- Approaching other potential donors for potential scale-up activities.
- Training of farmers on good farming practices. **Over 40 Farmers** benefited from an in-depth training course. The nuclear family units, which in most cases are involved in field activities, have consequently improved their knowledge. **The total number of people who have moved from occasional agriculture to actively practicing agribusiness is over 120.**
- Creating a functional relation with the community members for potential future activities.

Training of the farmers on good farming practices boosted yields. Significant strides were also made by JV ALMA CIS as the company got involved directly in farming activities. This further improved the farming practices the farmers had. By emulating JV ALMACIS farming activities, farmers yields are expected to increase significantly in the coming seasons.

By forming the Kiptolelyo Self-Help Group, farmers are now organized into a single economic entity who can better bargain with key market players. Thanks to the constant availability of water, **Farmers can have 4 harvests a year, compared to 2 previously gotten.** This has significantly changed the earning capacity. **The revenue from farming has increased by over 50% for each family unit.**

The skills and experience gained by JV ALMACIS during Bando Profit 2019 were used to develop a model to assist small-scale farmers in other regions in Kenya. Africa, being a largely agricultural – based economy can receive more assistance through the development of such models and the dissemination of information rather than the development of infrastructure alone.



CONCLUSION / RESULTS

The creation of the store for the common storage of products gave the inspiration for the creation of the local market. The market has created employment in hospitality and catering activities. **5 people** have found employment there.

It is also easier for the farmers to get loans as a registered group from micro-finance institutions like Faulu and Equity Bank since they have a record of previous harvests (Beans and Watermelons).

School tracking for school going children was also done in order to instill in the students a mentality of agribusiness. This involved lessons conducted both on the irrigation scheme and in class. It is the aim of JV ALMA CIS that by doing so, students will have a mentality for agribusiness. This will remove the phenomena currently being witnessed in Africa where rural youth have to move to urban centers to look for employment opportunities.

By getting involved in agribusiness, the youth can create self-employment where they are without migrating.

The Schooltracking program involved the entire Kapluk school community, for a total of over 300 students involved.



RECOMMENDATIONS

- There is a huge untapped market for Capacity building activities related to agribusiness in Kenya.
- JV ALMACIS has reached out to other potential donors as outlined in the technical proposal.
- *‘Presentazione del format a Donors interessati a destinare fondi ad un progetto replicabile e scalabile’ ‘Presentation of the format to Donors interested in allocating funds to a replicable and scalable project’*

Translation:

- *Subsequently, at the start of the project, we intend to involve other stakeholders and charities, in based on their ability to influence and generate opportunities in the renewable energy sectors of Agribusiness, and depending on how much they can be an instrument of access to public and private fund*

In line with this, JV ALMACIS reached out to the following institutions:

- DANIDA
- JICA
- GIZ
- USAID
- AFD
- SIDA
- IFAD
- KEFAAS
- NORAD
- UNDP
- FAO
- GC-RED
- WFP



PIERGIORGIO DI CARMINE

OVERALL IMPACT OF BANDO PROFIT 2019

In summary, the following are some of the impacts of the implementation of Bando Profit 2019:

- From the implementation of the initiative and the installation of the irrigation scheme *over 40 farmers* are direct beneficiaries of the scheme with *120 farmers* benefitting from training activities and shifting their mentality to an agribusiness oriented mindset.
- Other beneficiaries of the initiative were *300 students* and family members of the farmers who can now attend school as their parents have a steady source of income.
- *5 people* have also found employment as a result of construction of the store. The store, which doubles up as a market area / point of sale for the farmers produce, has created employment for people who offer catering services to people who attend the market days.
- The farmers' harvests have also doubled *from 2 to 4 yearly* as a result of good farming practices as well as increased availability of water for irrigation.
- Through the selection and training of interns, *3 interns* have received stable employment and form part of the Capacity Building Department of JV ALMACIS. The Capacity Building Department also offers a chance for employment for other youth within the country.

Africa is largely agricultural, therefore infrastructural development cannot be considered as a long – term solution. The key to providing maximum assistance to farmers is by developing a model which can be replicated in various regions. In this respect, JV ALMACIS is putting all its effort to develop a model based on good farming practices done in Kenya which can be adopted by local authorities in other countries.