



NEWSLETTER



Innovative ways of learning, demonstration farming and water management for enhanced food security and income generation in coastal regions. (NICHE/KEN/212)

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Introduction

By Alma Ruting, project coordinator
Q-Point BV



The project "Innovative ways of learning, demonstration farming and water management for enhanced food security and income generation in coastal regions" (NICHE/KEN/212), is running a year now.

Our project partners, DLV Dier, KI Samen, TU Delft, Mrs. Elizabeth Mbaso and Mr. Nicholas Kimolo started with training about farm management, cattle genetics, water management and blended learning. Leadership and strategic management, gender assessment and a start with the labour market needs assessment were started with the Pwani staff. In this newsletter we want to inform you about the different project activities.

I hope you enjoy reading.

Alma Ruting, project coordinator

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Outcomes and outputs

By Prof. Patterson P. Semenyne, Dean School of Agricultural and Environmental Sciences, Project Director, animal scientist



Since the emphasis of the grant letter is on outcomes and outputs of the Project, they will be used to update achievements so far accomplished and planned activities for future implementation.

Outcome one:

At the end of the project, the requesting organization will have the academic and organizational capacity to develop, implement and maintain innovative educational programmes in food security that deliver competent graduates who are

gender sensitive, entrepreneurial and relevant to labour market needs.



Main gate of Pwani University.

In fulfillment of outcome one and its outputs, the project has done the following:

Accomplished:

- Organized three blended learning workshops;
- Organized Farming Systems Workshop. (with Mr. Niek Wassink);
- Organized one artificial insemination (AI) and embryo transfer (ET) Workshop (with Mr. Reurt Boelema);
- Carried out a pilot study on labor market needs assessment. Full blown survey on labor needs assessment is to be undertaken soon beginning with alumni;
- Sent two project members for value addition chain analysis workshop under the auspices of Q-Point at Bukura College;
- Currently working jointly with Funzo Kenya (USAID Project) on blended learning.



Project staff receiving instructions from one of their students who is on field attachment.

To come soon:

- PU Management refresher workshop;
- Main streaming of gender in curriculum, training, recruitment and activities;
- Gender Vs Food security and global warming;
- Development of New Programmes Under Blended Learning;
- Gender, food security and global warming;
- Capacity building for staff has been earmarked for specific training with strategic provision to meet the project outputs.



On phone survey on labour market needs assessment.



Students of Diploma in Animal Health and Management posing for a group picture with two lecturers, at extreme left Dr. Noah Maritim and extreme right Mr. Eric Gicheru.

Outcome Two:

In fulfillment of outcome two and its outputs, the project has done the following: At the end of the project, the requesting organization will run sustainable demonstration farms in livestock, crop production and water management for purposes of training, research, and outreach, dissemination of innovations and supply of quality genetic materials to stakeholders.

Accomplished:

- Smaller scale demonstration farm has been demarcated fenced and crops planted per the farm plan;
- For the larger farm procurement of equipment for production of adequate animal feeds is ongoing. Equipment is estimated to cost over 2 million Kenya Shillings. Money for procurement was remitted to our local account nearly two months ago.



Group picture of Mr. Reurt Boelema with Project Staff concerned with AI and ET.



Examining growth of a live fence at the Model Farm.



A view of the Model Farm, ready for planting.

Towards Water Security Through Integrated Water Management.



Prof Bas Heijman with Project staff viewing a range of water pumps in display at a local firm.

In order to tackle water scarcity an integrated approach is necessary because it is not likely that one source/approach will cover all needs. There are four water sources at Pwani University and the coastal region at large (not including the tap water). In order to use the different sources for the different targets water treatment is needed. This can vary from simple and cheap to more elaborate and costly.



Drinking water shortage at Pwani University.

Water issues are growing in importance in Kenya. The coastal area is especially affected by sea water intrusion resulting in brackish water wells. It is important that the students will be able to tackle water related problems in the future.



Another illustration of water shortage, drinking from the hand while trapping spillage in a bucket.

The new course should be in operation in 2017 and is preferably a blended learning course. An important part of the blended learning is that the students can see the technology in operation and can work with it. So for 2016 the construction of demonstration installations is considered.

Demonstration installations are considered at two locations:

1. The new farm location. Here the rainwater runoff will be gathered for irrigation purposes. Also other technology will be considered (e.g. ceramic pot filters). A well is needed at this location. The TDS of the water will determine the possibilities for usage and the need for treatment.
2. A student hostel preferably of 120 students will be made self-sustainable with respect to water. Roof catchment rain water will be stored in a large container. Waste water of the hostel will be treated and used for irrigation and brackish well water will be treated to drinking water. Preferably the energy for treatment will come from solar energy.



Hostel that will be used to harvest rain water.

Laboratory facilities

To support the education in water quality and water treatment a small lab facility is needed. The lab should be equipped with at least a conductivity meter, pH meter, small spectofotometer with test tubes, the Atomic Adsorption Spectrophotometer (AAS) that is already in the lab should be repaired in order to measure heavy metals. Currently there are lab facilities in place to measure microbial parameters such as E.coli and total cell count (TCC). With these facilities all important water quality parameters can be tested by students in a practical course. They will learn how these parameters are measured and why these parameters are important.



Typical small scale drip irrigation that will be installed at the Model Farm.



A visit of Girls' school to learn more about agriculture.



Inside Pwani University rabbitry.



Some members of the Project in full academic regalia during the graduation ceremony held on 24th September 2015.

Kenya, good cows and lots of potential

By Reurt Boelema, Export Manager KI Samen



The first week of May the AI (artificial insemination) and ET (embryo transfer) course of the Ken 212 took place at Pwani

University. It was a very interesting and constructive week. The team worked hard to find the right way to go forward in cattle genetics in Kenya.

First of all it could be concluded that the potential for the dairy farmers in Kenya is high. With a milk price that is almost double the European milk price and a still growing demand for dairy products it is possible to go forward with a very good dairy sector.

For a profitable sector the right genetics are very important.



Good cows which show that the level of some individual cows is very high in Kenya.

The ideal cow for many farmers is a crossbred cow that produces around 4000 liter of milk. To achieve that goal ET seems to be very expensive and not very efficient. That's why the focus is on AI. To get fresh genetics in, but to keep the genetics of the local cows that are adapted so well, in too. For a successful AI system, heat detection and good semen handling are key factors.

Makitosha's Lifetime Production Champions
As per July 2012

No.	Name	No. Lactations	Lifetime Total
031 C	Sylvia	12 & counting	81 823 liters...
027 IS	Womers	14 & counting	76 630 liters...
096 IS	Malgudo	8 & counting	68 986 liters...
111 IS	Intal	7 & counting	65 705 liters...
106 IS	Haraka	8 & counting	55 685 liters...
107 IS	Baraka	8 & counting	52 371 liters...
143 IS	Hoga II	8 & counting	51 702 liters...
073 E	Bahali	6	46 484 liters...
045 IS	Shi	6	45 583 liters...
130 F	Nyabale	7	41 003 liters...
112 IS	Tamaaha	8	39 256 liters...
066 KP	Gango	5	37 545 liters...
046 KP	Bori	4	33 930 liters...
048 IS	Hoga I	3	31 407 liters...
016 C	Mbuni	5	31 019 liters...
106 IS	Bij	4	30 267 liters...
209 IS	Orni	3 & counting	28 672 liters...
070 IS	Cholka	3	27 579 liters...
051 IS	Kali	4	27 198 liters...
067 IS	Scanes	5	26 519 liters...
097 IS	Stangura	4	25 250 liters...
176 IS	Bui	4	23 887 liters...
231 IS	Haraka	4 & counting	22 859 liters...
193 AI	Hali	4	22 291 liters...
074 IS	Hagi	4	21 952 liters...
138 AI	Gull	3	21 648 liters...
075 IS	Mummbi	3	21 315 liters...
241 IS	Hawana	3 & counting	21 181 liters...
131 E/T	Scanes	3	20 810 liters...

List of wonderful life productions also show that the level is high.

After good conversations and some farm visits it turned out that the farmers in the Pwani coast region are looking for cows with a reasonable production without troubles. Heat stress seemed to be the most constraining factor.



Reurt Boelema with the in Africa highly acclaimed bull Cracker of the Wilg.

The second part of the week, the whole team worked on that. The next steps will be building up an AI run to get a profitable and sustainable dairy herd that is adapted to the local circumstances and produces a little more than the pure local cows.

Integrated water management as a solution strategy

By Bas Heijman, associate professor in drinking water engineering at the department of Water management of the faculty of Civil Engineering and Geosciences TU Delft



Water issues are growing in importance in Kenya. The coastal area is especially affected by sea water intrusion resulting in brackish water wells. It is important that the students will be able to tackle water related problems in the future. The new course should be in operation in 2017 and is preferably a blended learning course. An important part of the blended learning is that the students can see the technology in operation and can work with it. So for 2016 the construction of demonstration installations is considered.

The integrated water management approach is demonstrated on the campus and on the campus farm.

Sea water is not considered in this study seawater desalination is rather expensive (1.5-2 euro) and will cost a lot of energy (about 3 kWh/m³).

There are four water sources (not including the tap water) available:

1. Rain water catchments from the roof. This is a rather good quality water but unfortunately it is not available during the dry season. Also it is unpredictable and big storages are needed. It can be treated to drinking water quality.
2. Rain water runoff, During heavy rainfall there is an abundant amount of runoff from paved surfaces as well as grass fields. The runoff water should be guided to a reservoir with a lining. This water can be used for irrigation purposes.

3. Brackish water from boreholes or dug wells. This water has a too high salinity as drinking water for human or animal consumption. After desalination with reverse osmosis (RO) this can be used as drinking water.
4. Domestic waste water. Water with a high COD, ammonium and pathogen content. This water is now discharged without treatment. For the future treatment and reuse is planned. After treatment this water can be used for irrigation.



The salinity of the well water on a chicken farm was too high to use it for the chickens.

In 2016 the needed technologies will be demonstrated in for instance a student Hostel (120 students) and in the campus demonstration farm.

Labour market need assessment mission 19 – 21 August

By Olivia Ansenk, trainer Q-Point BV



The first steps have taken place for the labour market need assessment. We had a very nice workshop with participants from various backgrounds (teaching staff, graduates, HR staff) to set the labour market need strategy, develop the questionnaires, test the questionnaires and map the labour market stakeholders for animal-, crop production and water resources.

indicate labour market gaps, needs and opportunities for graduates of SASA. The team of SASA is eager to go into the field and consult the various labour market stakeholders. After consultation the team can fill out the excel reporting format developed to ease processing of the data obtained. The assessment results will be presented in a report which will be used to guide course, outreach and research developments.



Pilot team visit farmer to test questionnaire.

New contacts will be consulted together with the alumni network of the Pwani University's School of Agricultural Science and Agribusiness (SASA). This assessment will provide answers to set the right direction for SASA. Stakeholders can



Cassava and sweet potato local supermarket.

Setting up a demonstration farm

By Niek Groot Wassink, Consultant Financial Management DLV Consultancy and Performance



In the first week of March I visited Pwani University. Pwani University is developing a demo farm for small scale farming.

Beside the demo farm, the University is developing her experimental farm and commercial farm.

The main goal of the project is to make the demo farm a success. Building the farm and choosing the right investments are an important part of the developing.



Soon she has a new cowshed on the new Demo farm.

On the other hand there's the need of data to make sure the farm will be successful and remain successful. One of the most important pieces of making it a success is how to use the demo farm as a facility which can make the farm a good example for other small scale farmers in the coastal region. For that we need to compare the results of the demo farm with 20 other small scale farmers, to make everyone learn from each other as a study group.

We developed a way how to collect data for the right way of record keeping. With the start of good record keeping and book

keeping we can benchmark all the data of the demo farm. The data will be collected by the students of the Pwani University and the 20 dairy farmers can be selected in the way they have their dairy farm organized. All dairy farmers can receive a lot of information from each other and can finally receive their record keeping, bookkeeping and long term budgeting certificate.



The Pwani students are enthusiastic to start the data collections on the 20 selected small scale farms.

We ended the week with an enthusiastic group of people of the Pwani University who all want to make the demo farm a success this way.



Manure digestions and gas production at the Pwani farm.

Blended learning



Group picture at the end of the workshop. In the middle wearing a tie is the Vice Chancellor Prof. Mohamed Rajab, to his immediate left is the Project Director Prof. Patterson Semenye and to his immediate right are workshop facilitators Mr. Nicolas Kimoli and Mrs. Elizabeth Mbase respectively.



The workshop at full swing with Mr. Nicolas Kimoli on the floor.

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Partners



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Requesting organisation



Pwani University

Donor



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Colophon

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