

# NEWSLETTER

Improving Food Security and Economic Growth in  
Mozambique through Higher Polytechnic Education  
Provision (NICHE/MOZ/150)

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## Introduction

By **Carel Jaspers, Director Q-Point BV**



The project "Improving Food Security and Economic Growth in Mozambique through Higher Polytechnic Education Provision" (NICHE/MOZ/150)

is funded by the Nuffic/NICHE program and will cover a four-years period.

The project will focus on capacity building in the field of Agriculture Hydraulic and Water Supply and on Agro processing and Food Technology, responding to the needs in the market in Mozambique and with a gender perspective. The new course on agro food processing will be launched in quarter this year. In this newsletter you find information about the project, the state of affairs, but also backgrounds, stories and experiences of students and teachers. I hope you enjoy reading.

*Carel Jaspers, director Q-Point*

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## Practical training on relevant water issues and irrigation for lecturing staff of the Agricultural Hydraulic and Rural Water Supply Course of ISPG, Chókwè

By **Jos Kroets, senior adviseur IPC Groene ruimte**



ISPG and the Q-Point consortium will implement short practical courses on water issues and small scale irrigation. The purpose of the irrigation training

facilities is the skills training of the students.

It will enhance:

1. Their performance in carrying out irrigation (as supervising);
2. Improve their practical knowledge on existing irrigation methods;
3. Improve their practical skills and knowledge in collecting and estimate

data for design of irrigation systems;



*Practical surveying in the field with the self-made water-hose-level.*

4. Their performance in extension on irrigated crops/agriculture.

The lecturing staff of the Agricultural Hydraulic & Rural Water Supply Course of ISPG have a leading role in the realization of practical training so they must have enough practical expertise to achieve this.



*Measuring infiltration rate of the soil in the field at the ISPG-campus.*

By conducting practical training in the field to measure characteristics relating to topography, soil and water, the lecturing-staff and students will gain a better understanding of it and to the importance of it in their future role as a development agent in determining irrigation methods/systems, pumps, crop choices etc.



*Measuring the compaction of the soil near ISPG.*

To make successful designs of irrigation systems it is obvious that the important parameters of topography, water and soil need to be measured in the field and by laboratory tests. This can practically be done by implementing vocational training in:

1. Land surveying, measuring heights/slopes with levelling-instrument (dumpy-level), measuring staff, grid-points, ranging-poles and a simple and 'self-constructed' leveling instrument (waterhose-level). By using the acquired knowledge the teachers (and the students) can produce topo maps of the locations where the constructing of irrigation systems are planned.
2. Collecting data in the field which are essential for design irrigation systems: soil survey (both chemical and physical), compaction of the soil, infiltration rates of water. The training will contribute to a fast, structural and sustainable improvement of the present conditions and the understanding of data on soil and water characteristic needed in the design of successful working irrigation schemes.
3. Design irrigation systems, construct irrigation systems in the field (control the contractor) and implementation of the irrigation systems in combination with growing crops.



*Choose for every type of soil the right auger.*

The first two courses were given in 2014 (May and September). The third course will be organized in 2015.



*The lecturing staff of the Agricultural Hydraulic and Rural Water Supply Course of ISPG and trainer Jos Kroets from The Netherlands at the end of the training.*

## Exposure visit to The Netherlands

**By Olivia Ansenk, trainer Q-Point BV**



From 17 till 22 August Instituto Superior Politécnico de Gaza (ISPG) visited the Netherlands together with Instituto Superior Politécnico de Manica (ISPM).

This visit concentrated on project management progress (preparation of the Annual Plan 2015) and exposure visits to food technology organisations and water projects in The Netherlands.

Jos Kroets of IPC took the participants of ISPG to see water projects and related organisations HKV, Waterschap Rivierenland and IPC. HKV is also active in Mozambique to strengthen the capacity of local water management organizations in Mozambique in managing dams, dykes and the river system efficiently and in a sustainable manner. Experiences were shared between ISPG and HKV. The exemplary project Munnikenland was visited, this project illustrates very well how the integrated approach to floods leads to success. In slot Loevestein a presentation of the project was provided by an employee of waterschap Rivierenland. Jos Kroets of IPC also demonstrated water and irrigation equipment relevant for ISPG.

For inspiration for the food technology lab and curricula a butcher was visited in Amsterdam Slagerij de Wit, known for its quality and sausage making process. Here we learned how to break down a pig into

all the available cuts in just a few minutes and how each part can be used in different ways. The equipment and operation was very enlightening for the visitors, as it showed them how you can organize many meat processing activities in a very small area.



*Visit to butcher De Wit in Amsterdam.*

Moreover an extensive consultation with HAS Hogeschool was organized to learn from their Food Technology lab and curricula. Johan Wels from the HAS took time in his summer holiday to organize a tour through the lab and elaborated on essential equipment and educational activities to teach basic food technology subjects.



*Exposure visit HAS Hogeschool, organized by Johan Wels of the HAS.*

They also paid a short visit to Telstar for Food Technology equipment.



*A short visit to Telstar for Food Technology equipment.*

Furthermore Olaf McDaniel and Pim Pollen from CBE had the opportunity to organize a session in Amsterdam to discuss follow up activities on the earlier undertaken strategic management and quality assessment activities with academic staff in Mozambique.



*The delegation from Mozambique (ISPM and ISPG) discussed with Olaf Mc Daniel and Pim Pollen from CBE about follow up activities.*

## Experiences of student Food processing

**By Handina da Graça Lurdes Langa Massang**



The food processing study teaches techniques of how to turn raw materials into secondary products, giving them an advantage. Teaches also store food for one to ensure longer shelf life thereof.

Problems of various orders can be seen during the storage process, and is an intrinsically insect - pests attack in stored grain. Insects - pests are likely to cause direct or indirect damage to man. The most commonly used to control pests of stored grain is the chemical, mainly for efficiency and practicality in the application, the most used are: pyrethroids, aluminum phosphide and magnesium phosphide. The problems

caused by the chemicals are: the high degree of toxicity during fumigation and pest resistance to insecticides.

Faced with the need to find alternatives to chemical control, it has been suggested the use of plant extracts in the control of several species of insects - pests including stored grain. It lies on several literature reports the use of plant extracts in control of insect - pests.

By the problems caused by these fumigants, there is a need for further research in order to insect - pest control of stored grain. Among the studies that have been developed, one can include the fumigant action of essential oils of vegetable origin, the use of ozone gas in

insect - pest and the quality of stored grain.

In the course intend to become expert in the storage post - of food crop (especially grain) using alternatives to chemicals such

as ozone, essential oils and dusting with powdered pesticide (diatomaceous earth) in order to improve the quality of stored grain and ensure a quality stock for periods of food shortage.

## Experiences of student Geohydrology

By Paulo Sérgio Lourenço Saveca



### General overview of Geohydrology

Geohydrology is part of water management (or water cycle) which is specifically related with groundwater and his interaction with surface water. As groundwater part of hydrologic cycle, the central concept of Geohydrology is an understanding of the occurrence of water and the development as well as the management of water, taking into consideration the geology setting. The Geohydrology it is interdisciplinary in scope in that it involves the application of the physical, biological, and mathematical sciences.

### Application of Geohydrology

Since 2014 when I start to study Geohydrology, different knowledge of surface and groundwater resource was learned from different modules. In summary, the modules give me tools to understand and to manage different water resource (surface and groundwater) in different geological setting, taking into account:

- a. type of the aquifer;
- b. hydraulics properties of surface and groundwater;
- c. type of water users (agriculture, mining, supply and industries);
- d. geological setting.

In other hand, using different software (in field work and desktop study), was also possible to learn how to determine the source or target zone of groundwater occurrence as well as the sustainability

quantity of water to be used in different proposes - agriculture, supply, mining and industries.

Therefore, to get above knowledge different subjects were learned namely:

- i. groundwater hydraulics;
- ii. groundwater geochemistry;
- iii. groundwater geophysics;
- iv. groundwater modeling;
- v. hydrology and mining;
- vi. groundwater management.

In general those subjects also provide me better understanding of the movement and the forces that govern the groundwater in the earth (as well as surface water), making his relation with the geology as well as the sources of water pollution.



*Paulo (l) and his college C.J. doing geophysics studies to determine the target zone of groundwater using gravity method.*

### Advantage to study Geohydrology

Studying Geohydrology, it represents for me the good advantage, because now I'll

be able to use either surface water or groundwater sources for agriculture proposes. This advantage represents opportunity to produce different crops in different seasons of the year. In other, this is also another opportunity in water management to make a good combination between surface and groundwater to be used to guarantee the food security of the population in arid or semi-arid regions of Mozambique.

### **Challenge after Geohydrology study**

After my study I want to complete MSc in Geohydrology. In other, I hope that once I have MSc in Geohydrology I would like to consolidate and improve the obtained knowledge doing self-studies as well as field work including consult services in my country. Also, I would like to achieve good professional career in Geohydrology, while I'm working as University Lecture at ISPG.



*Illustration of field work doing pump test to determine the sustainable yield of the borehole to be used in different proposes, agriculture, supply, mining and industry.*

### **Looking to the future?**

First of all I would like to say that to study Geohydrology is any opportunity to improve my professional career. Due to this opportunity, I see my future with more success, because I will use my know-how in Geohydrology not only for Agriculture activities, as well as for Mining, Industrial and water supplying. These different options to use my knowledge in Geohydrology will help me to have good progress professionally.

In the future I want to organize some workshops, to help them about different topics namely:

1. Integrating water management for food security in Mozambique;
2. Groundwater Management for agriculture activities in different environmental context – tropical, arid and semi-arid areas of Mozambique.

So, i think that doing this training courses or some workshop it will help the people of my country, to understand the concept of Geohydrology and his contribution in water management for food security in Mozambique.

### **My deep thanks**

First of all I appreciate your work team and due to that I would like to express my thanks for the Q-Point company in how their do the management of our studies in Mozambique-ISPG. This is also extendable to the coordinator team of NICHE/MOZ/150 project at ISPG.

## **ISPG is taking commitment towards gender equality and equal opportunities for men and women**

**By Christine Verheijden, Expert gender & water Diversity4Change**



Due to the Niche project, ISPG is giving more attention to the importance of gender equality and equal opportunities for men and women. In the past, by an alliance project between the

University of Cordoba (Spain) and ISPG a gender analysis had been carried out. It was well-timed that the Niche project started at the moment the results of this analysis were presented.

The process of gender awareness and capacity building on gender issues within the ISPG community has been based partly on these results.



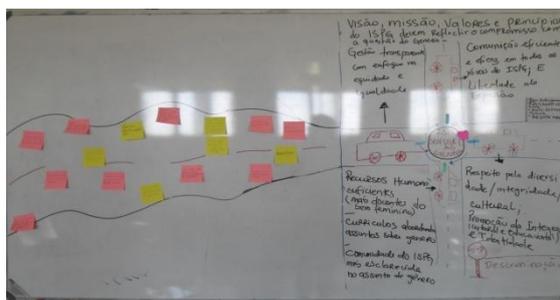
*After the presentation of the results of the gender analysis of the previous project, the - at that moment temporary gender commission in discussion with the coordinator of the Cordoba project.*

Besides taking into account these results, dating from 2010, an additional gender assessment that has been carried out in order to get to know more actual information, about the organisational culture of ISPG and the sensitivity of its environment for considering gender equality and equal opportunities for women and men. This has been carried out among all staff, teachers and support staff, and students.



*Group of students that participated in a focal group discussion, part of the gender assessment carried out in June 2013 at the start of the Niche project.*

During a 2nd mission the bottle-necks, weaknesses and gender gaps identified in the previous one, as also some of the lesson learned during the following period, have given the skeleton for building the road to follow. At that time the gender commission, then consisting of 3 persons, with an additional support group worked very hard on this. First they started drawing their dream of a gender-sensitive ISPG. Afterwards they have been able to define and prioritize (small) steps that need to be taken in order to reach that dream. With these different steps, also called the strategies, they were able to develop a draft Gender Action Plan. See picture below.



*Dream (right side) and its roadmap (to reach there) of ISPG regarding its compromise with gender issues.*

A 3rd gender mission, a Training of Trainers (ToT) workshop, took place for the gender commission of ISPG together with the one of ISPM in November 2014, in Chimoio. Both institutions have now consolidated gender commission, with a more permanent occupation of the team members. ISPG is having now a team of 7 members, 5 men and 2 women. The objective of the training was analyzing the current situation regarding gender in the organization and in the curriculum. This has been done by looking to the time path since the beginning of the Niche projects, and what had been done or reached in the meantime. The training content was based on their specific needs.

As being themselves the agents of change in their respectively institutions, all of them needed to get some skills on how to give awareness sessions and eventually trainings on gender issues to other staff and students. The training therefore consisted in:

- Knowledge on current gender gaps and identified needs and/or priorities for the implementation of the Gender Strategy (GS) and Gender Action Plan (GAP) had been taken into account and included in the programme.
- Revision and providing feedback on the draft Gender Strategy (GC) and Gender Action Plan (GAP).
- Training the members of the gender commissions so they acquired new skills and knowledge for the implementation of the gender strategy in practice, as also the gender action plans.

The training of four and a half day made it possible to work a lot with the group. Theory and practice have been intermixed through presentations and group work. With the feedback on the draft versions of the Gender Strategies (GSs) and Gender Actions Plans (GAPs), the gender commissions have been both improving and finalizing their GSs and GAPs so they can be discussed soon in the meeting of the Board of Representatives. For ISPG this will happen on the meeting of February 27th, although it has been approved already by the Management Board.

It is planned to have a follow-up training for the whole group in April in Gaza. Until that time both commissions are getting backstopping from distance on request.



*Members of the gender commission in de ToT training.*

## Partners



Q-Point BV  
The Netherlands



CBE International  
The Netherlands



IPC Groene ruimte  
The Netherlands



Egerton University  
Kenya

UNIVERSITY OF THE FREE STATE



University of the Free State  
South Africa

## Requesting organisation



Instituto Superior Politécnico  
de Gaza

## Donor



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## Colophon

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