



# 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**



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

is funded by the EP-Nuffic/NICHE program and is now in the last year of implementation. Recently, the equipment for the food technology lab is delivered and installed. ISPG staff is trained by Egerton University and Q-Point on value addition. The last year the focus will be on linkage with the private sector in agro food processing and in water management and further implementation of the new and revised curriculum.

I hope you enjoy reading.

Carel Jaspers, director Q-Point

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## Project progress

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



In February Carel and I traveled to Mozambique to discuss project progress so far with the Mozambican counterpart; mr.

Dr. Pedro Comissal, mr. Lateiro de Sousa and mr. Daniel Muiambo from ISPM. Last year (2015) has been a very constructive year with many activities and investments, all contributing to the development of ISPG and more specifically food technology and rural water supply education, research and extension activities. First student impressions of the new food technology course are promising. The food technology lab will contribute to relevant practical's and research activities, which are requested by the labour market.



*Financial manager Daniel Muiambo and Olivia Ansenk*

## Flood hydrology and its forecasting

**By Dr Fredrik Huthoff, Technical and strategic advisor to Direcção Nacional de Gestão de Recursos Hídricos, Mozambique, HKV Consultant**



As part of the project HKV Consultants provided a one-week workshop at ISPG on flood hydrology and its

forecasting.

Flood threats in Mozambique are severe and pose serious risks to food security and other damages and losses to the country. On average, every year Mozambique is facing several hundred million dollars in direct damages related to floods, and these numbers do not even include the indirect economic losses and other consequences that are related to lost harvests and threatened livelihoods! In particular the Limpopo valley is a region in Mozambique that is very vulnerable to floods, as was evident from recent catastrophic events in the 2000 and 2013. The floodplains along the river are fertile grounds and have for many year been the a preferred location for agricultural activities and human settling. In recent decades, these activities have grown significantly, bringing more prosperity to the region but also introducing larger risks in relation to floods.

During the workshop general aspects of flood hydrology and risks in flood-prone areas were covered, with specific reference to the situation in the Limpopo Valley and the surroundings of Chokwe. The institute ISPG itself is located in the Limpopo floodplain, but, as identified during the workshop, fortunately was chosen at a relatively safe location against floodings. This is not the case for many other valuable assets in the region. During the workshop, several tools and concepts were shared with the participants that could be used to reduce the vulnerability against floods. These included hydrologic modeling tools that can help anticipate on

oncoming floods and can be used to investigate potential flood mitigation measures.



*During the workshop*

ISPG staff and students showed great eagerness in working with these tools and concepts, and responded enthusiastically to investigate local flood risk, the potential consequences and all kinds of flood-alleviation measures that could be considered for the region. The introduced tools were all free of use, so that ISPG could continue working with them and even consider taking them up in their curriculum. We hope that ISPG indeed takes on this important task, and will contribute in developing the needed expertise and the future expert workforce for a safer and more prosperous Mozambique.



*Fredrik Huthoff and Susanne Groot (HKV, hydrology expert) and the group of workshop participants with their certificate of completion*

## Bacteriophage used as milk conservation

**By Angélica Agostinho Machalela, Professor of the Polytechnic Institute of Gaza**

I had the privilege to benefit from the scholarship under the NICHE-ISPG funded project, for holding Masters in Brazil in Food Processing with an emphasis on Microbiology and Biotechnology of Food. My training was positive because I learned many processing techniques and food preservation without the use of preservatives.

**My training was positive because I learned many processing techniques and food preservation without the use of preservatives.**

I worked in the microbiology laboratory and pathogens foodborne and hydro (LAMPOAH), the research carried out there are directed to the prevention of pathogenic and spoilage microorganisms in food.



*DNA extraction for molecular characterization of bacteriophages*

My research theme was bacteriophage use as milk conservation alternative in Mozambique.

I faced some difficulties during the study due to lack of material for research. This difficulty was overcome with the amount that was made available by NICHE project designed to support the research of

scholars. I would like to establish a value chain in ISPG for processing and storage of agricultural products produced in ISPG in the agricultural and zoo technical engineering courses.



*Revelation of proteolysis analysis by gel electrophoresis technique in milk*

For such chain is established, the assembly processing, microbiology and food analysis is required. Promote extension programs in communities on the processing, food preservation and methods of control of pathogenic and spoilage microorganisms in food.

**I would like to establish a value chain in ISPG for processing and storage of agricultural products produced in ISPG in the agricultural and zoo technical engineering courses.**



## Graduation MSc student

**By Handina da Graça Lurdes Langa Massang, Graduated Msc student**



I did my Master's degree in agricultural engineering in the area of quality grains and by-products stored. In my thesis I evaluated the fumigant activity of essential oil of parsley on *Callosobruchus maculatus* in cowpea.



*Cowpea*

It was very good for me to work with. It is a technology little used in Mozambique. I can move on to farmers through agrarian extension, since the beans in question is

the most produced and consumed by farmers.



*Callosobruchus maculatus*

I would like to do more research regarding the biological control of insects, testing oils from native plants that occur in my country that have not been studied in order to improve the issue of pest control in stored grains and respond to the needs of communities.

**I would like to do more research regarding the biological control of insects.**

## Training Competency-Based Education

**By Hester van Kuilen, Education consultant dp<sup>2</sup>**



It was my second mission to IPSG and during the previous one I was warned for heavy floods in February. But instead of pouring rain, we faced temperatures above up

to 40 degrees. The climate nonetheless didn't stop the lecturing staff of IPSG to attend a training about competency-based education.

The training was preluded by another visit, during which several education approaches were presented and discussed with some representatives of the lecturing staff. We then decided that Competency-based Education (CBE) would be a good fit

for ISPG, considering its ambitions and the available resources.



*The participants listen attentively*

Competency-based Education can best and briefly be described as an education approach that combines knowledge, skills and attitudes in a holistic ways, and as a means that prepares students for the actual labour market by providing real life assignments and establishing close connections with the sector.

The four day training had the objective to equip the participants with sufficient knowledge and skills to start implementing CBE in their own lessons. Often, the choice for CBE comes with a substantial curriculum review, but because this was beyond the scope of the project, it was decided to focus on what lecturers could do on classroom level, either individually or within subject departments.

There was a strong focus on competency based objectives (that are a mixture of knowledge, skills and attitude), assignments and criteria for assessment. Participants mostly worked in groups and provided each other peer feedback. It was a real pleasure to see how the majority of the participants was able to grasp the core

principles of CBE; the lecturers developed objectives and assignments that they could start using immediately in the new academic year.

Ideally such a training is followed by some coaching on the job, and sharing of experiences and good practices amongst the lecturers. The fact that during this trainings the participants worked very well together, is promising for the further implementation of CBE



*The participants received a certificate*

## Impression of the design of the laboratory

**By Mark Bos, Trainer Q-Point**



*This empty space is built up to the laboratory*



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*Unpacking and assembling the equipment is a lot of work.*



*The laboratory is ready.*



## Food technology in relation to curriculum development

By Sebastiaan Hetterschijt, Trainer Q-Point



From 16 to 20 May Q-Point, in cooperation with Egerton University, has given a practical training in food technology. This involved the use of the machines that have been purchased on behalf of the EP-Nuffic project. Focus was on developing instruction forms for practical tasks based on the previously developed curriculum.



*The training was at new campus of ISPG in Chokwe. On the campus equipment was delivered to the new food lab*

In response to this instruction forms practical lessons have been developed and various machines have been demonstrated.



*Several practicals were carried out in the new lab*

The following technologies have been discussed: bakery technology, meat / fish technology, fruit and vegetable technology and beverage technology.



*Some practicals were outside*

It was decided to let the teachers become familiar with the production of goods. The quality control will be discussed in a subsequent mission. The leadership of ISPG was pleasantly surprised by the results. They plan to use the food technology lab to process the products coming from the field



*Participants of the practical training in food technology together with Prof. Symon Maina Mahungu (right) and Mr. Sebastiaan Hetterschijt*

## ISPG officially launched its Gender Strategy!

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. During a process of almost 3 years ISPG has worked towards the development of a Gender Strategy for equal opportunities for women and men at the institute, both at the level of staff as of student. The process of gender awareness, followed by capacity building on gender issues within the ISPG community has paid off.

The institution has set up a gender commission (team of 7 members), installed a gender office and developed a gender strategy. This strategy based on some important principles presents also some practices to promote gender equality, as well as the operationalization of gender mainstreaming in the organizational units of ISPG and a gender action plan based on the objectives and specific objectives.



*General Director of ISPG Dr. Pedro Comissal*

On May 29th, 2015 an official public launching event was organised in order to launch the Gender Strategy. This was done by the General Director of ISPG

Dr. Pedro Comissal, who held a short presentation on the importance of this occasion and the fact that ISPG is having its own Gender Strategy, a Gender Commission, as well as an Gender Action Plan which can be seen as the work plan for the members of GC for the coming 2 years.

Also the Coordinator of the NICHE project Eng. Lateiro de Sousa said a few words about the importance of this NICHE project for ISPG, mentioning also the number of staff benefitting of the project through the learning opportunities that are offered for a Masters or PhD study.



*Eng. Lateiro de Souza, Coordinator NICHE project*

Afterwards the General Director handed over a few copies of the Gender Strategy to the president of the Student Association.





*General Director ISPG Dr. Comissal handing over some copies of the Gender Strategy to the Chair of the Student Association*



*A participant asking a question*



*Four members of the Gender Commission*

The closing activity of this special event was a presentation for raising awareness on gender equality for a broad audience of students and staff of all levels during which I also presented the individual members of the Gender Commission to the public.



*ISPG Gender Commission, May 2015*



*Participants listening to presentation*

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## Partners



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The Netherlands



CBE International  
The Netherlands



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The Netherlands



Egerton University  
Kenya



University of the Free State  
South Africa

## Requesting organisation



Instituto Superior Politécnico  
de Gaza

## Donor

This project is financed by MINBUZA through EP-Nuffic (Netherlands organization by international cooperation in higher education).



## Colophon

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