



NEWSLETTER

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



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Preface

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. In the last implementation year of the project, there is a focus on business development and entrepreneurship and to optimize the incubation centre of ISPG. A delegation, consisting of Dr. Pedro Comissal, general director of ISPG, and Mr. Lateiro de Sousa, director research, visited the Netherlands to meet several partners in the water sector, such as Witteveen & Bos, TU Delft, WUR, IPC Groene Ruimte, IHE, Eijkelpark and the Netherlands Water Partnership (NWP). During the meetings, further collaboration between ISPG and Dutch organization was discussed.



Pedro Comissal, Simone Langhorst, Lateiro de Sousa and Carel Jaspers in front of the office of Q-Point.

I hope you enjoy reading.
Carel Jaspers, director Q-Point

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Interesting visit to Water engineering laboratory.



A visit to the canals of Amsterdam.

Brief report of The Netherlands mission, May 2017

By Lateiro de Sousa



Background

The Netherlands mission took place as an NICHE/MOZ/150 project activity, whereby the ISPG intended to search for potential partners for joint capacity building and research projects with ISPG. The main area of interest in this mission was the water sector as the region where ISPG is located, as well as, the countrywide, resents from water management difficulty. ISPG was represented by Prof. Hortêncio Pedro Comissal, Director General and Mr. Lateiro Salvador de Sousa, Deputy Director General for Academic Affairs and Research.

ISPG is currently offering a bachelor degree on Agricultural Hydraulic and Water Supply Engineering (EHAAR) since 2010. As food processing course, also bachelor, this course has benefited significant capacity building which helps to train lecturers, equip a soil and water lab and rehabilitated demonstration field for irrigation. The current pattern of drought and floods occurrences in the region, as well as limited access to drinking water by the communities, has imposed serious challenges to ISPG in order to analyse the potential solutions and contribute for water improvements. As educational provider and researcher, ISPG can offer courses more lined with market demand and communities needs. In addition, students need programs paying more attention toward entrepreneurship in different sectors, including water. Therefore, ISPG started revising the EHAAR course, from which intends to derive three new courses, namely: Irrigation Engineering, Water Supply and Sanitation Engineering, and Civil Construction Engineering. Having limited capacity by itself, ISPG see possibilities in collaborations with relevant partners,

which can be located in the Netherlands, one of the well known countries in water management.



Meeting Netherlands Water Partnership (NWP) in The Hague.

The Mission

On the first day of the visit, the two ISPG staff members joined by Mrs. Simone Langhorst (Q-Point consultant) visited Wageningen University & Research Centre (WUR), accompanied by Dr. Jaime Hoogesteger who guided the team in different meetings. The first with the Prof. Petra Hellegers, head of the Water Resources Management Group. After a short presentation by the ISPG on the institution and the mission objectives, Prof. Hellegers manifested on behalf of her team, full willingness to collaborate with ISPG in relevant fields of interest for both institutions, particularly in water sustainability. The following meeting was in terms of Education Institute member, Mr. Bert Bruins, who presented the WUR education scheme and priorities in the post graduation, which goes to water sector and related. At the end of the WUR visit Ing. Harm Boesveld took the team to the irrigation practice field, where a small surface irrigation experiment unit was visited. At the end of the visit at WUR the ISPG team, was satisfied by the large potential for collaboration in teaching and

research (short courses trainings, MSc and PhD), for ISPG side. Both institutions verbally agreed to follow up the discussions by searching for financial support to implement the program. The day finished with an in depth appreciation of the ISPG business plan for the Incubation Centre in preparation with support of the Q-Point consultants.

On the second day, 9th May, the team now joined by Q-Point Director, Mr. Carel Jasper, the ISPG team went to Delft and visited Technical University (TU) Delft, accompanied by Prof. Maurits Ertsen, where after water engineering laboratory visitation, both sides agreed for joint collaborations as long resources are made available.



The delegation in conversation with Maurits Ertsen, TU Delft.



Water engineering laboratory.

Similar outcomes came also from the UNESCO-IHE, where the ISPG team met Prof. Namanja Trifunovic, from Water Supply Engineering and Mrs. Vanessa Guedes Oliveira of the International Relations.

After visiting both higher education providers (TU Delft and UNESCO-IHE), the ISPG was satisfied to identify strong potential partners to continue building capacity on the teaching, research and extension as some of its mandate.



Visit production facility Eijkelkamp.

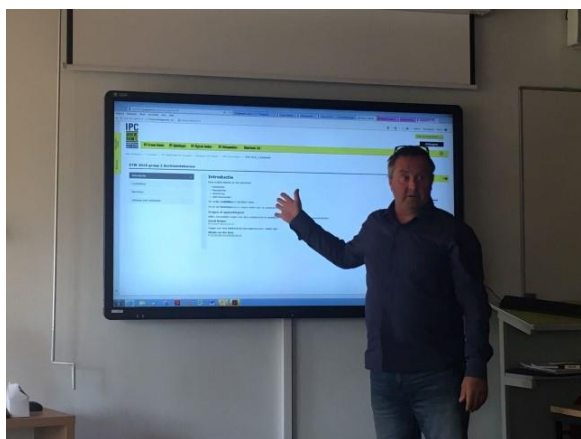
On the third day, the ISPG visited Witteveen & Bos in Deventer, where significant achievement as been reached by the potentialities of strong collaboration in joint projects in water sectors and engineering. Mr. Rob van den Boomen and Mrs. Stephanie Gijsbers presented the company and ongoing projects. Witteveen & Bos is willing to help ISPG in a pilot study for flood hazards mitigation through a landscape usage re-planning. The day ended with Netherlands Water Partnership (NWP) meetings, at The Hague, where two companies joined the discussions, namely Dutch Water Partnership (DWP) and Future Water, who implements the project ThirdEye (use of drones for crop and water sustainable management). Both companies are interested in Mozambique and have ongoing projects there. After presentations by the NWP, ISPG, DWP and

the Future Water, opened discussions led to verbal consent that there is very high potential for the parts to work together.



Research facilities WUR.

On May 11, the team went to Schaarsbergen, to visit IPC Groene Ruimte. This company is running a blended course programs for different engineering fields. ISPG found it of significant interest, if more students are to be reached and more flexible courses to be introduced. After IPC, a very short visit was held at Eijkelkamp, where interesting equipments and materials have been identified in the field of engineering and water sector.



Dirk Jan of IPC tells about the blended course program.

The last day of the mission, was reserved for some project management activities, concluding remarks on the mission and sightseeing around Amsterdam.

Concluding remarks

The ISPG team is satisfied with the results of the mission. In most cases, ISPG has

found that partners prefer that before joining official agreements, some joint activities should first be started to justify their signatures. Nonetheless, significant commitments that have been reached with the companies and institutions contacted encourage the ISPG to continue with its mission and vision, including its plan to restructure the EHAAR course and intensify its contribution in the region towards the achievement of sustainable management of water resources and beyond.

Other areas of interest of the ISPG such as the production of crops, animals, forests, aquaculture and the like, although they have not received significant attention in the mission, great potential has been identified for its improvement through follow-up of students and graduates in a monitoring system and internal and external quality assessment. The system will also allow partners of interest to the ISPG to leave their contributions to improve the services provided. This will be possible through the installation of a digital platform on the ISPG, which is expected to be operational by the end of July 2017.

Business research and incubation remain a priority in ISPG and therefore, projects should be established in these centers in the short to medium term as a result of this mission. Focus goes to continuous improvement in the number of publications to increasingly credibilize the ISPG with the society and partners identified as TU Delft, UNESCO-IHE and WUR. For incubation, conditions are expected to be established to stimulate the creation of viable business ideas and entrepreneurship, both among students, graduates, teachers and society in general.

The ISPG thinks that with this visit its perspective of starting the expansion of courses for the technology and

engineering sector may be closer and closer, once the cycle of opening of engineering courses in the agricultural sciences is closed. The increase of master's courses in other fields is still a challenge, which will depend very much on the effective exploitation of the opportunities opened with this mission. Finally, equipping existing labs and

opening new ones and learning workshops remains a challenge to be overcome in ISPG. To achieve these and other perspectives, ISPG plans to jointly design and implement projects with relevant companies and institutions in the near future, identifying funding from these and other partners.

Development Business plan incubation centre

By Simone Langhorst, trainer Q-Point



During the second week of May, Dr. Hortêncio Pedro Comissal and Mr. Lateiro de Sousa of ISPG visited the Netherlands for the MOZ150

project. I.a. the main features for a business plan for the ISPG Incubation Centre were drafted in cooperation with Q-Point's Simone Langhorst, Mark Bos and Carel Jaspers.

The plan particularly focuses on the mission and vision (which way to go) of the Centre, the services it should provide, which clients it should serve, what the best business model is, the stakeholder analysis (what influence do stakeholders have and who is influenced by the Incubation Centre itself) as well as on the financial part.

ISPG will further develop these guidelines and turn it into a final business plan.

As a follow-up activity, Simone visited ISPG in the first week of June for a training on idea generation and business plan development. Around 30 ISPG staff members and students were involved in the training. As result, 6 concept business plans were presented as result of this training.



Generate ideas for start-ups.



A lot of ideas, 6 x 24, were the result of the brainstorming.

Training ISPM Food technology

By Monique Schoone, trainer Q-Point



My first mission to Mozambique was to ISPM in Chimoio, to train staff in food technology. Also five lectures from ISPG joint the training at the ISPM campus. The practical training in the lab was in collaboration with Prof. Symon Mahungu from Egerton University. Participants were trained how to use the lab equipment and how to measure and control food in process. It is the last part to the control circle in food processing. If you develop a product, you have to be sure that continues quality and quantity will realised. The last part in this production circle is the control part. You have to realise which part of process or product add the value or makes the difference. f.e. if the fat, protein or fiber content is the important added value, you should measure it. If the production process arises microbiological, chemical or physical adulteration, it has to be checked and controlled by measurement.



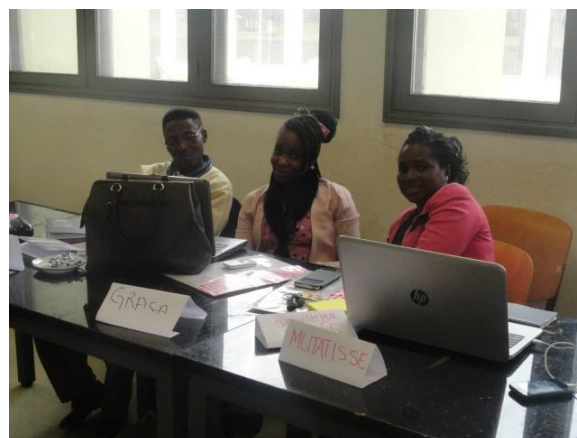
The participants learned how to work with a spectrophotometer and the stomacher (which used to mix samples).

Prof Symon explained in theory how to use the equipment:

- Distillation and neutralization for protein analyses.
- Extraction -Soxhlet method- for fat analyses
- Titration -the Mohr method- for analyses the sodium chloride

All participants get explained the theory of spectrophotometry and could explained this in practicum. Also we explained the moisture and solid measurement which is important by control water activity cq micro biology damage. The practicum of measurement which unfortunately was short, but it has been associated with process of critical control during the training.

Monique explained why you have to control/measure the process or product and how to get the best results.



Participants from ISPM and ISPG working together on a flowchart for the production of yoghurt.

In order to make products longer preserved rather than directly after slaughtering, picking or harvesting to be consumed, technology has to be necessary.

During the training the participants learn f.e.:

- How they can give more quality or shelf life to the product or condition.
- How they have to work on the basic principle of the hygiene (GMP) as well as HACCP.
- How they have to determine what steps has to be taken to preserve, edit or/and change a product for longer shelf life. These steps on paper is called a flowchart.
- How they perceive what microbiological, chemical and physical hazards there are.



Making tomato sauce and orange juice.

Some attentions for the products we made were meat production, yoghurt, orange juice, jam, tomato pasta and tomato juice.



Two participants, one from ISPM and one from iSPG, working together on a flowchart for the production of meat.

The participants are divided in 4 groups, a few students started enthusiastic with the production with all ingredients we bought and others were busy with the theory. In future the best is to start with the process after the discussion of hygiene and critical points in order to prevent damage products. Each process has their one critical parts. You have to identified, analyse, preserve and control these criticals. If you chooses the right one results effected.

Because not all chemicals and glassware were available, we have to improvise and to be very creative for the whole week. Overall, it was a very interesting week with enthousiastic staff.



Participants from ISPG and ISPM in Chimoio.

Workshop business plan incubation center

By Mark Bos, trainer Q-Point



In April 2017 Simone Langhorst and Mark Bos went to Chokwe for a workshop business plan development for the ISPG Incubation Center. The objective of this workshop was to develop a realistic and bankable business plan for the ISPG incubation center.



The participants of the workshop.

Objective of the workshop:

- To identify the efficiency and functionality of the incubation center at ISPG and the reason for existence;
- To identify the bottlenecks and the issues for improvement;
- To determine a mission, vision, values, objectives, the context of the

organization, stakeholders and target group(s), risks and changes, organization, ownership and it's human and financial resources.



Presentation of the results.



Channel and reservoir, funded by the project.

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Colophon

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