



Commercial Satellite Imagery Project to support UNEP's National Environmental Atlases and UN HABITAT's Lake Victoria Urbanisation Initiative

Venue: RCMRD, Nairobi 29th November to 1st December 2011

WORKSHOP REPORT

Introduction

The key purpose of the workshop hosted at the RCMRD, in Nairobi Kenya from 29th November to 1st December 2011 was to understand the needs, support the development of base urban planning maps for the Lake Victoria region and build capacity of local planners to be able to use GIS and remote sensing to support their work. More importantly the workshop brought together key International, regional, sub-regional, UN, national, academic and local organizations around a table to strategize around how this group could collectively support the Mapping Africa for Africa (MAfA) initiative.

This workshop and training session was unique in that the urban planners from Kenya, Tanzania and Uganda were provided with high resolution commercial satellite imagery of their local geographies and their training was customized to address real issues in their local work area.

The programme was structured as a plenary on Day One, while Day Two was divided into a strategic planning session amongst; EIS-Africa, US State Department, UNEP, UN-HABITAT, Makerere University and the RCMRD as well as a parallel training for the Lake Victoria Urban Planners. Day Three focused on training and an evaluation of the training curricular for the purposes of structuring follow-up (in-country) training in the associated Riparian countries.

The following section of this report will briefly describe the presentations made during the course of the workshop.

Meeting Proceedings

Dr. Tsefaye Korme, Deputy Director General of the RCMRD, welcomed all participants to the workshop and apologised that Dr. Farah (Director General) was unable to participate in the workshop as he had to attend the COP17 of Durban at short notice. Dr. Korme briefly went through the three day programme and asked the workshop participants to introduce themselves.

Dr. Korme gave a brief history of the RCMRD, the role it played as a regional representative of ISPRS and also outlined his organizations key activities as well as their role over the past seven years in supporting urban planning in Lake Victoria.

Sives Govender, of EIS-Africa presented a welcome message on behalf from Prof. Ian Dowman, First Vice President of ISPRS.

The message delivered described ISPRS's pleasure in being able to contribute to this initiative that promoted capacity building in Africa. Prof. Dowman's message further described his belief that the essential ingredients to any capacity building programme were that there should be a coordinated approach from international organisations; projects should be related to local needs; data should come from satellite operators; and software should be provided from industry. Furthermore the projects must be sustainable. This project, he stated in his message, contained all of the first group of requirements and he hoped that the involvement of UN-Habitat and the US Department of State would ensure that it is sustainable.

Mr. Govender informed the participants that the ISPRS Congress will be held in Melbourne, Australia, from 25 August - 1 September 2012.

Finally, Prof. Dowmans message wished that the meeting was successful and productive and he sent his apologies for not being able to attend but hoped to see you at other similar events in the future.

Dr. Axumite Gebre-Egziabher, Director Global Division, UN-HABITAT acknowledged and recognized all the key organizers and participants of the workshop. She then stated that UN-HABITAT was very happy to collaborate with ISPRS, the US State Department and EIS-Africa in its Lake Victoria urban planning programme. She described that the urban planning programme in the region was borne out of the need to provide spatial frameworks to guide physical interventions that are meant to promote environmental sustainability and reduce poverty. This was a cross cutting and complementary initiative to nine programmes by the UNHABITAT that are expected to deliver long term and short term detailed urban plans.

Dr Aauxmite reflected that more than half of humanity lives in urban areas. UN-HABITAT studies show that the future increase of the urban population will happen in the small and medium urban centres. The Lake Victoria region is home to an estimated 25 million people whose livelihoods depend on the resources of the region. She indicated that the continued existence of this population is under threat as a result of the negative environmental impacts of the secondary towns in its catchment area. Further most of these secondary towns are experiencing rapid urbanization of 3-7% per annum and are the main generators of pollution entering the Lake. This has therefore promoted UN-HABITAT, other agencies, regional bodies, and national governments of the Riparian countries of Lake Victoria to support various initiatives in the region in bid to promote environmental sustainability and reduce poverty.

According to Dr Auxmite, Phase One of the urban planning programme in the region involved the towns of Homa Bay and Kisii in Kenya, Masaka, Kyotera and Mutukula in Uganda, and Bukoba and Muleba, and Mwanza in Tanzania. Phase two included fifteen secondary towns in the five East African countries of Kenya, Uganda, Tanzania, Rwanda and Burundi and it has been designed in the framework of LVWATASN Phase two which is on capacity building.

Dr Auxmite indicated that a review of phase one of the programme reflects that a lot has been accomplished in terms of the objectives of the programme. According to her long term plans had been finalized for the towns of Homa Bay and Kisii, Masaka, Kyotera and Bukuba, and short term plans have been finalized for Mtukula, Muleba and Mwanza. However she indicated that the one key obstacle in the preparation of these plans has been the unavailability of geo-spatial data sets to support urban planning. Urban local authorities in the region have found this to be a very expensive venture given that they have very small budgets. It is therefore Dr Auxmite's hope that the collaboration with the State Department, EIS-Africa and other relevant partners in making the data sets available as well building the capacity of the respective urban planners in mapping skills will go a long way in ensuring that the UN-HABITAT programme becomes a success.

In conclusion Dr Auxmite wished the workshop participants a successful and enjoyable training session.

Joseph Murphy, the Permanent Representative, U.S. Mission to UNEP and UN-HABITAT gave a special address, on his role working on behalf US State Department in liaising with UNEP and UN-HABITAT in supporting their programme of work in East Africa with particular reference to the Riparian States.

He was very aware of the urgent need for satellite imagery to support activities around sustainable development. He reinforced the State Department's commitment to development in Africa and acknowledged the power of technology and more importantly partnerships. He was pleased to participate in this meeting as the Lake Victoria area has been one of focus areas especially in terms of water and sanitation projects. He related how he saw firsthand how rapid and unplanned urbanization impacted people and the environment. He mentioned that the Executive Director of UN-HABITAT emphasized planning for sustainable development. He cautioned that you have to have accurate data and capacity building but tools, information and planning must be turned into action.

He described too, how the UNEP Atlases have proven to be effective and powerful communication tools. He concluded by wishing participants a fruitful three days ahead.

Mr. Sives Govender, the Executive Director of EIS-Africa, described his organization and their key activities undertaken to support Mapping Africa for Africa, the development of fundamental geospatial datasets and its collaboration with the Association of American Geographers, the US State Department and the NGA in providing African countries access to high resolution imagery to support the derivation of base maps and fundamental datasets. He described how EIS-Africa was a key implementing partner of MAfA and executive working group member of UNECA's CODIST which was responsible for driving Spatial Data Infrastructure in Africa.

He further described that geospatial data and information was key to effective planning and ultimately decision-making in Africa and that satellite imagery was vital to planning process. The lack of access to satellite imagery of high resolution was a great barrier to development together with the lack of appropriate infrastructure and skill at the local planning level.

This workshop, funded by ISPRS, a member of EIS-Africa would for the first time bring a group of partners who, with their combined strengths address the issue of data access and more importantly customized GIS and remote sensing training to address real-life issues. He also described this event as hopefully the first of many to assist UNEP and UN-HABITAT. He finally thanked all the participants and a special message of gratitude was made to Prof. Ian Dowman and ISPRS and UNOOSA for providing financial assistance that made the workshop a reality.



Picture of participants of training workshop

Mr. Paul Bartel, Humanitarian Information Unit, US Dept of State described his work in the office of the State Geographer and discussed the Global Dialogue for Emerging Science and Technology (GDEST) initiative in Africa to support geospatial science and technology for sustainable development. He described how information, if shared is valuable and that was the essence of GDEST i.e. share, collaborate, build and strengthen partnerships, build upon existing networks of excellence. He saw MAFa as an African driven initiative which had a clear strategy and goal, which with international support through activities such as GDEST could gain momentum. He saw this workshop as more than a project but as a starting point for a long term initiative and therefore said that supporting UN work in

Africa as a logical approach. He went on to describe how Government needed data and information for transparency, credibility, accountability and civil society needed it for mapping local geographies and ultimately informing government.

He stressed that USDOS would support collaboration amongst the UN agencies, civil society, academia and countries but that the satellite imagery provided came at a high cost and that the imagery had to provide maximum benefit to the recipients. This imagery had to effectively used and the base maps created and methods used must be demonstrable so has to benefit others.



Urban Planners from Kenya, Tanzania and Uganda during GIS training.

Mr. Frank Turyatunga, UNEP DEWA, described his division's programme of work and role in Africa in particular the development of the African Environmental and Water Atlases. These Atlases utilized photos, satellite images and graphics to tell a story that was more easily presented to decision-makers. The Atlases were described as also providing "hope-spots" and not just doom and gloom scenarios. These Atlases have now also developed into national products, with Kenya and Uganda completed and Rwanda almost finalized.

Mr. Turyatunga elaborated that accessing satellite imagery is still a huge problem as many African nations internet connectivity makes downloading data virtually impossible and that we need to empower regional hubs like EIS-Africa to assist with data access. He also mentioned that we should look at a long term strategy and not stop gap measures. He went on to say that while the images provided in

UNEP Atlas's are useful they cannot evaluate the management of the environment. Much of the work has to be done on the 'then what'. We must be able to provide decision makers with scenarios and options through a narrative. Finally he concluded by saying that geo spatial products must bridge the science to policy gap. Often this is major shortfall.

The next part of the workshop had presentations from Uganda and Kenya detailing reports around the first phase of the commercial imagery project.

Dr Shuaib Lwasa of Makerere University acknowledged USDOS, NGA, AAG and EIS-Africa for providing high resolution commercial imagery for Kampala. This imagery was used to study and analyse urban sprawl and utilized the University undertaking applied research. He described how Kampala city centre had grown from being 38 square kilometres in the 1920's to close to 900 square kilometres at present. Analysis through the interpretation of satellite imagery allows for robust acknowledgement for decision making. Dr Lwasa described there methodology of using reflectance values to identify features, but stressed that ground truthing is also necessary. Finally he stressed that knowledge is dynamic and that the role of African universities is important to move from capacity building to capacity development.

Mr Eric Khamala delivered a presentation on behalf of Dr Wilbur Ottichilo of the Kenyan Parliament around Emuhaya District Council's information system. He described how geo information is being used for rational development planning in Emuhaya. This district is 177 square kilometres with a 127 000 people. He also described that the imagery received from EIS Africa in January 2011, together with photographs and fieldwork allowed for the development a of a comprehensive district information system. Base maps and other key socio-economic data are available on the website (www.Emuhaya.gov.ke). The information system developed is available to all citizens and supports community participation, transparency and accountability. He concluded the presentation by stating that the use of GIS and remote sensing is a vital tool that can used at local level throughout South Africa.

Dr Jossy Materu of UN-Habitat spoke on the strategic urban planning in Lake Victoria. He reflected that urbanization was growing at a rate of between 3 to 7% per annum, and at the same time the planning profession was being neglected, especially around Lake Victoria. The consequences around Lake Victoria are magnified . Dr Materu stressed the need for long term training and support to urban planners in the Riparian countries around Lake Victoria so as to avoid disasters experienced in bigger cities. UN-Habitat is also faced with challenges around the maintenance of equipment, access to appropriate hardware and software but also dealing with issues of trust al local government level. Dr Materu mentioned the case of the Kisumu GIS centre, which was funded by donor agencies as an isolated example of infrastructure at local government level. He stressed however that most other local offices do not have basic amenities such as water and electricity. Finally Dr Materu appealed to the group to develop a long term strategy to facilitate data access, GIS training and the acquisition of GIS software to support the fifteen "secondary " cities of the lake Victoria urbanization project.

The final session of day one focused on presentations from local planners from Kenya (Physical planning, Department of Lands; Municipal Council of Kisii; Municipal Council of Homabay; and City Council of Kisumu), Tanzania (Geita District Council; Tabura Municipal Council; Sengerema District Council and

Bukoba District Council) and Uganda (Rakai District Local Government and Masuka Municipal Council). All the urban planners presented information regarding the geographic extent, population statistics and socio-economic characteristics of their areas. They also described the various legislative frameworks within which they operate. For example in Tanzania land belongs to government and until 1999 all land had no value. The 1967 land acquisition act described government as the owner of land and citizens merely as occupiers. In Kenya there was a mixture of lease title and freehold title.

In terms of training there was also no clear responsibility, in some cases central government, in the form of planning ministries were responsible for training of urban planners. Local planners at the secondary cities around Lake Victoria were often employed by the Local authority which have no funds to support training where its need most. It was reported by the planners present that some of their base maps used originated from the 1960's and while there were isolated examples of projects to support local municipalities; many didn't even have computers to use.

The picture painted by the urban planners was a bleak one. They are in desperate need for support in basic GIS and remote sensing training to develop base maps for strategic urban planning. They require up to date, high resolution satellite imagery as well as appropriate GIS software.

Day 2 and day 3 of the meeting was tailored to provide specific urban planning and GIS training in using local data, but it must be stressed that this is merely a start to make real differences to the Lake Victoria area. All the partners involved at the meeting, including organizations such as Esri and the ISPRS must be brought together to discuss these issues further.

Conclusion

This workshop funded by the ISPRS, was hugely necessary to understand the real needs of urban planners of Lake Victoria.

Data access alone will not make any difference to these communities. The needs of the urban planners are great but if organisations like EIS-Africa could use its international and continent wide network to leverage broader, financial and technical support there is an opportunity to make a significant positive impact on the cities around Lake Victoria.

However any intervention must incorporate engagement with the East African Economic Commission as some of the challenges raised pointed to the lack of policies and legal frameworks at the local level to support integrated urban planning.

Finally within the financial constraints articulated the group gathered also looked at the use of open source GIS software and participatory/Volunteered Geographic Information systems as options to sustain the process. Customised training to meet the planners' daily needs must be structured using the expertise of Regional technical centres as well as Universities such as Makerere.

Students could assist in producing base-maps and for fieldwork. This will give students practical experience which could be credited to their coursework and also serve to train urban planners.

This meeting was a reality check and a eye opener to many of us who work at a regional to international level. We all agreed that we need a long term partnership and bring in other partners like ISPRS to contribute to long lasting and positive change in the region .

This workshop will require immediate follow up activities at the local council level.

Finally, EIS-Africa on behalf of all the workshop participants, would like to thank the ISPRS and UNOOSA for their financial support, without which the training of the eleven urban planners would not have been possible. EIS-Africa hopes that ISPRS will continue to support the planned follow-up activities in 2012.