

## ***“The nexus debate at African Utility Week will be specifically about Africa and for Africa”***



**Exclusive interview with Paul Yillian, consultant at Sustainable Energy for All (SE4ALL) and the International Institute for Applied Systems Analysis (IIASA). He is also a moderator in the Panel dialogue on the Water-Energy-Food Nexus at the upcoming African Utility Week in Cape Town in May.**

**You are moderating the Panel Discussion on Water-Energy-Food Nexus at African Utility Week. In the light of this topic, can you explain what your role entails at the International Institute for Applied Systems Analysis (IIASA)?**

At IIASA, I support applied and policy-driven research on water-related problems mainly through IIASA's flagship research programme, “Global Water Futures and Solutions”, a joint IIASA, UNESCO, IWA and World Water Council initiative, which is assessing current and future states of water resources around the world. The initiative has strong research components on the links between water and energy, and brings together scientists and stakeholders from both public and private sectors, and decision makers to provide solutions oriented information for water managers at multiple levels of governance.

**How does your work at IIASA relate with your responsibilities at the Sustainable Energy for All (SE4All)?**

My work at IIASA is intertwined and closely related to my responsibilities at SE4All, the UN Secretary General's initiative on sustainable energy for all by 2030. SE4All brings together top-level leadership from all sectors of society – governments, business and civil society in support of three interlinked objectives: providing universal access to modern energy services; doubling the global rate of improvement in energy efficiency; and doubling the share of renewable energy in the global energy mix. The nexus is at the core of achieving these objectives. In that regards, I develop the nexus perspective within the core activities of SE4All and a framework for action to move towards more concrete measures on the nexus and its relevance for the post-2015 development agenda. In addition, I represent SE4All at global fora and activities on the water-energy nexus and advocate increased consideration of the interdependencies between various nexus dimensions, including climate change, ecosystems, poverty, women and children's health, food security and livelihoods in addition to water and energy.

**Why is it important to have a discussion on the nexus at the African Utility Week?**

It is important to discuss the water-energy nexus at the African Utility Week (AUW) because the conference is essentially about water and energy. Water utilities are meeting energy utilities at Africa's premier event on water and energy. Water and energy utilities will sit together under the same roof, thus physically linking energy and water professionals and businesses. Where else would anyone want to discuss the link between water and energy? On a more serious note, however, the AUW is an appropriate venue to discuss the water-energy-food nexus because most of the challenges in providing access to water, energy and food for the bottom billion without adequate access to these resources lie in Africa. Many African countries face serious development challenges, including extreme poverty, disease, and high infant mortality rates. It is also the continent with the highest population growth rates and urbanization rates. Yet still, it is the continent with the largest untapped resources potential.

**Could you explain that further?**

Sure! We have seen reports with evidence that hydropower could supply all of Africa's electricity needs but finding the money for dam and hydropower plants remain problematic. Consequently, Africa currently generates just one third of its electricity from hydropower. On the other hand, the desire to develop hydropower carries certain risks, and these risks cannot be ignored. Conflicts can arise with downstream uses, including irrigation, in-stream uses, and supporting ecosystems, with serious consequences on livelihoods. A reasonable approach would be one that can enable stakeholders, especially, those in the energy, food and water sectors to work together. Thus, hydropower schemes must take into account the impact on agriculture, fisheries and ecosystems. This is the kind of discussion we are expecting to have on the nexus at the AUW. We have put together a panel of experienced water and energy experts who are prepared to share their thoughts and experiences in the context Africa's economic growth and the global debate on the post-2015 development agenda as it relates to Africa in particular.

**In your opinion, how will this panel discussion be any different from any other forum covering the nexus?**

The nexus debate at the AUW will be specifically about Africa and for Africa. Of course, we shall be discussing a topic of high global significance but the discussion will be tailored specifically to respond to the requirements within the African context. We shall cover such topics as investment opportunities for developing Africa's water and energy infrastructure, i.e. innovative private sector participation, private public partnerships, etc. and the water and energy linkages with food production systems and improvement of livelihoods.

We shall also discuss policy and governance issues at all levels; local, national, regional and global. We shall cover nexus trade-offs that can minimize risks and maximize opportunities. We have business representatives and CEOs from water and energy companies on the panel to cover efficiency gains in water and energy infrastructure. For example, how the business community is adjusting their production systems for much more efficient resource use, and how they are working with other stakeholders to maximize benefits from nexus opportunities. We shall also discuss integrated nexus infrastructure solutions, in particular, the synergy between man-made infrastructure and the reliance on natural ecosystems like wetlands and flood plains for flood prevention, for example. In addition, there will be discussions on practical field experiences, i.e. development-driven technical assistance and cooperation nexus programmes, mainly in Africa and how these can be replicated and scaled-up.

We shall talk about delivering real solutions on the ground, with examples of water/energy/food projects in Africa that have a nexus character build in them. Finally, we will discuss funding mechanisms and provide some examples of global/regional nexus initiatives. We have on the panel a specialist from the World Bank who will provide insights into global/regional nexus initiatives and the funding mechanisms/opportunities that exist, especially on how countries in Africa can benefit from those initiatives and how development banks like the World Bank and the African Development Bank can provide their experience on working with governments on development models that promote further replications of nexus driven initiatives.

**What would you say are the other challenges that the water industry is dealing with?**

The major challenge for water as a resource is that it is being overexploited in some places, and in many places, it is being polluted in various ways. This is getting more and more serious with increasing economic development, growth in population, changing lifestyles and shifts in demographic patterns. At the same time, water as a sector is difficult to manage because we are dealing with a substance that is needed and influenced by many other sectors. For instance, water is needed in industry for the production or manufacture of several products and services. Similarly agriculture and the food production

industry need water too. There is also electricity generation and primary energy extraction and processing, all of which need water as well, and then there are municipal water requirements, mainly for human wellbeing and so on. As a matter of fact, the water sector must deal with the requirements of multiple competing uses and at the same try to address numerous challenges from a wide variety of public and private users, policy sectors, decision makers and stakeholders at various levels.

### **How can this be addressed?**

It requires careful planning and coordination at various levels of governance and across different sectors as the interdependencies are much too important to be ignored by disjointed decision making that does not look at the whole picture. Yet, what we see is that policy makers and sector professionals in many countries still prefer to work in so-called “silos”. They are more comfortable in their domains and fret over the challenges they would face in working with others from differing areas of expertise. Essentially, we see that there are well established sets of policy for managing natural resources such as water, energy and food in many countries, however, policy and implementation is still largely sector-driven in those countries. The danger is that isolated policies that are formulated for one sector without taking into consideration impacts on other sectors are not only insufficient in many cases, they are actually very harmful.

### **What is your vision for the water sector?**

Africa's economic growth will continue and urbanization will progress rapidly. Lifestyles will improve and the demand for food, water and energy will continue to grow. Directly and indirectly, there will be increase pressure on water systems, with respect to both quantity and quality issues. African leader and investors should see the pattern of increased growth as an opportunity and use the nexus perspective to respond to emerging needs as they address current problems. I think there is an increasing understanding and necessity to act accordingly. Therefore, I envisage more emphasis on collaboration and partnerships, and I foresee an increased acceptance of the nexus perspective at various levels of governance; that the actions of one sector affect those of other sectors; that there are synergies and trade-offs in our actions; that synergies can be optimized and the negative impacts of certain trade-offs can be minimized through coordination between sectors and stakeholders.

### **But in reality, this is difficult to do, right?**

Yes, you are right is difficult to do but it is possible. We can start by building the critical mass of knowledge and institutions needed to make this change happen in Africa. We can do so by transforming our thinking, our education and governance systems to respond adequately to our changing landscape and breed generations of people who are conscious of the interconnectedness of the world in which we live. It is much easy to compartmentalize topics as though one domain alone can solve our problems. The water-energy concept is an opportunity to do things differently. None of the problems we are facing in Africa can be solved in isolation. It requires people from a variety of backgrounds to come together and work together in search of common solutions. This is of course not always easy. But it can be done and actually there is enough evidence out there that shows it can be done and there is no reason why it cannot be done.

### **What surprises you about the water sector?**

Nothing surprises me about the trends we are experiencing in the water sector because the drivers for the challenges are fairly well understood and the trends we are seeing are expected. We knew that the demand for water will continue to increase with growing population. Also we knew that competing sectors of society will place additional demand and pressure on the amount and quality of available fresh water at the same time as the demand for food, energy and other basic needs increase. We also knew that urbanization, improvements in lifestyles and shifts in dietary patterns towards water intensive diets, will all

have impacts on water, energy and food production, and invariably the sustainability of natural resources, including freshwater ecosystems.

### **So nothing really surprises you about the water sector?**

Perhaps, what surprises me instead is that we did not adequately prepare ourselves to respond effectively to this changing landscape of drivers and pressures, even though we knew it was bound to happen. In sub-Saharan Africa, in particular, public utilities in most cities are failing to provide adequate services. Of course, a number of factors make service delivery in many cities a difficult matter. Understandably, urban areas in Africa are highly dynamic and growth is very rapid but part of the problem is that many cities in sub-Saharan Africa have high proportions of unplanned areas. What we see is that growth in those cities is disorganized and uncoordinated with the provision of basic services such as water, electricity and roads. This means public utilities can, at their very best, only try to catch up or keep pace in the delivery of services. In many places, they are unable to catch up with the pace of unplanned growth.

### **What will be your message at African Utility Week?**

The nexus perspective will continue to receive widespread attention and support, locally and internationally. We should galvanize the interest it is generating by operationalizing commitments into concrete programmes by building strategic partnerships and alliances as we move into the future. The window of opportunity for action is now as a new global landscape is emerging on a number of sustainable development issues and as nations evaluate the options and policies they want to follow.

The international community can take a leading role in advocacy, coordination and communication, encouraging policy coherence among sectors, motivating innovation and investments in new technology, and offering financial support to improve current infrastructure and developing alternatives. But there are roles as well for governments and other scales of governance and/or influence, from municipalities to river basin organizations, the public and private sectors, industries and manufacturers, academia and civil society to find integrated solutions across sectors that are multipurpose, efficient and cost effective. In particular, the coherence of policy need to be promoted and supported by effective institutions that provide the enabling environment, which is required for investment opportunities, innovation and technology, as well as for capacity building. Already there are many programmes that integrate several nexus themes in optimal ways to address many of the world's development challenges. Those approaches can be consolidated and scaled-up and the experiences can be replicated or adapted in areas where they are needed.

### **Anything else you would like to add?**

The nexus is an opportunity for policy makers, business leaders, investors, non-governmental organizations and the public at large to address major development challenges by managing key resources such as water, energy and food through a collaborative framework among related sectors. A nexus perspective can enhance access to water, energy and food security by exploring joint opportunities, building synergies and increasing efficiency across these related sectors because actions taken in one realm can profoundly affect others. Governments and other spheres of influence could make and use policy in a much more integrated way, while the business community may choose to adjust their production systems for much more efficient resource use and work with all actors to benefit fully from the opportunities offered. NGOs (both local and international) could learn to challenge and collaborate with the business sector and local authorities to help deliver real solutions on the ground. On their part, financing institutions could use their experience on working with governments, civil works and procurement of demonstration models that promote further replications of nexus driven initiatives. Finally,

individuals and civil society as a whole could try to understand and manage their consumption patterns and the choices they make in an increasingly water-constrained world.

African Utility Week is being organized by Spintelligent.