The 2014 UNESCO Chair in Technologies for Development conference on the subject « Technologies for Development : What is essential ? » was a very good experience for me. First of all, it was the first time I attended a formal conference on three days. It was a very good opportunity to brighten my view on the subject of technologies for development and also to meet new people from different countries, active in the field or not.
The breakout sessions were a good opportunity to listen to papers presented by their author(s) and to know more about a specific subject. The questions asked by some participants (when there was enough time for questions, which was unfortunately not always the case) were also very interesting. Indeed, they were very often a time to reflect on the subject and to question certain ways of acting (some people asked deliberatley provocative questions).
Then, the coffee breaks and lunchtimes were a good opportunity to look at the poster from the different universities on different subjects. I was particularly interested in the posters from EPFL students because it gave me a broader view of the different fields in which the EPFL is doing research. Indeed, this event was also the opportunity to know my university better.
Moreover, the return on the different sessions, which took place on Thursday and Friday morning and on Friday afternoon, were a very good summary of the different discussions which took place in the sessions. It was interesting that some aspects, like the aspect of « cooperation with the locals », were raised in different sessions on different topics by the session leaders.
The keynote addresses were also very interesting. The speaker all had different jobs and status and it was interesting that they each had their personnal way of speaking about technologies for development. I was particularly interested in the presentation by Dr. Karen Scrivener, who believes that concrete will have a big role to play in the future concerning the technologies for development. Thus, it makes sense to study new ways of producing concrete.

On Wednesday afternoon, I attended the session on « Water and Sanitation Technologies for Sustainable Urban Development », co-leaded by Dr. Christian Zurbrügg and Dr. Hung Nguyen-Viet. Some themes were for me already known, like the presentation by V. Dutta, who talked about a system to clean wasterwater with an ecosystem (plants) but others were totally new. Indeed, I never heard about recycling human waste (urine/ faecal sludge) as fertilizer/ fuel production and the two presentations on the subject were quite convincing. Indeed, a lot of peasants, for example in India, are dependent from big western firm to get fertilizer for their crops, which will enable them to get some money, and they have to pay a very big amount of money. Such a solution to recycle human waste would reduce their dependency.
The presentation by Tove Larsen on « Sanitation Innovation for Urban Slums : The Blue Diversion Toilet » also raised important points. Indeed, for the project, the needs were defined by the Bill and Melinda Gates Foundation, the money donors. We discussed the fact that the team first had to check if the needs described by the Foundation were in accordance with the reality in order to produce an adequate technology for development. It is also always very important that the project is developped with the

help of the local communities, the users of the end product. In particular for a toilet, it is essential that the locals feel at ease by using the toilet and meet their expectations because they otherwise won't use it and the problem of water and sanitation isn't going to be solved/improved. For example, the team still have a point to work on because by bad weather, the mud gets into the toilet space and people are reluctant to use the technology.

On Thursday morning, I attended the session called « Community-Driven Innovation : Communicating Living Labs Essentials in the Developing World ». I didn't know anything about Living Labs and I found interesting that it is a « structure » which is being developped in different countries simultaneously, for example in Turkey (Istanbul) and in Saudi Arabia. I would like to mention the presentation of Lotfi Kaabi, an advisor to the Tunisian president, who talked about the strategy of the country to deal with poverty. The government wants to creates Agencies in all parts of the country, which are aimed at the local community and will for example employ young women with good education who aren't allowed to go alone to big Tunisian cities to get a job. Thus, the governement wants to use local capacities to eradicate proverty, which is an interesting idea. Indeed, what I heard a lot during the conference is the fact that developing countries want to deal with their problems by the way of local knowledge and not solutions directly imported from the western world, without any cooperation.

On Thursday Afternoon, I attended the Lavaux  session  « What technologies are Essential for Megacities of the Future to be Sustainable ? ». I was a little disapointed from the session because I didn't get precise answers to the question. However, the presentation by Margarita Gomez-Galvarriato Freer about her study of the way Mexico City's urban poors use the scarce water was quite interesting. For example, they use the used washing water to flush the toilets. In my views it is essential to considerate the habits of the everyday life, which can already be a part of the solution.

What I learned from this conference is that the technologies for development have to be developed with the local communities. First, the need  of the population have to be clearly defined. Second, it is very important that the local are involved in the project, which means that they are actively participating. Some speakers from India and Africa underlined this aspect. I was very puzzled by a presentation on Friday morning on the theme « Identifying opportunities and constraints for women in the renewable energy sector », which had this conclusion : a well which was digged in an African village to avoid women to walk long ditstances to get some water had to be removed, on the women's demand, because they had no other opportunity to be out of the village. This example illustrates all the complexity of the issue concerning the technologies for development and the fact that the population's needs have to be defined very clearly by talking to the local population in its entierty (people of all ages, men and women of all religions, etc.). Another interesting point is that a key word to speak about the technologies for development is « value ». Indeed, the local communities will take care of them only if they bring them something.
I was particularly interested in solutions to depollute the soil or the water with the help of local plants. For me, this solution has a high potential because it doesn't need any heavy infrastructure and it offers a environment of quality for the locals (a park along the river for example).

I particularly enjoyed the cultural event on Thursday afternoon in Lavaux, which was very well organized. It was also a way to get to know more people.

To conclude, I would like to thank the team of « Ingénieurs du monde » for giving me the opportunity to participate in the Dev4tech  conference.

**Luca Randazzo - Tech4Dev, a brief report from within**

I am an engineer and, specifically, I am one of those bad ones, always dealing with computers, robots and all that technical stuff that usually implies forgetting about those who would really benefit from the technologies we daily work on; therefore, attending the Tech4Dev conference represented a really good experience for me, and I have used this document as a way to crystallize many of the thoughts I have developed while attending it.

Given my strong interest for innovation, emerging technologies (as low-cost 3D printing), open-hardware and software and, especially, a strong interest towards the use of such technologies for the development of medical/assistive devices and tools for improving everyday lives of elders/impaired people, I was really happy about attending the several sessions related to the design, development and distribution of low-cost medical devices for the "Base of the Pyramid".

One of the things that immediately hit me during the first sessions was the grasping of how "far", most of the time, is the research being done within engineering and technical labs from the real, basic, needs in under-developed and developing countries; seeing problems that were solved so many decades ago in the "western" world (access to reliable sources of energy, water and, recently, access to internet and information) still hampering progress in these countries really puzzled me and made me wonder, so many times during the conference, about the value of some of the research we produce, when there's still such a big part of the world missing access to technology we usually give for granted. Despite this is surely a problem that has been faced so many times, having the occasion of experimenting it directly, by speaking with people who are really "touched" by such problems, has surely been an important experience to me.

I would say that one of the most important takeaways of the sessions I have attended was the understanding of the great importance of each and every aspect of the "chain" during the design, development and distribution of a technology that can be considered useful, usable and sustainable. Such thoughts mainly emerged from the great variety of technologies, devices and systems that were given as examples.
While considering such a big set, in fact, we were presented with many cases of both successful and unsuccessful innovations, along with the (presumed) causes of their success/failures; but, while the analysis of a successful story often takes for granted many of the core aspects of its own success (therefore leaving not so much space to the attendees for developing a critical analysis of the narrated story), seeing a whole plethora of good technologies, solutions and products struggling to emerge and find their way to the world where they really matter, helped me a lot in defining and focusing on many of the core questions related to the design/development/deployment process of

"sustainable" medical devices.

One of the most important questions, for example, was related to the reason why most technology innovation fail. As it was pointed out, rather than failing in the development, deployment or up-scaling process, innovations often fail at a really basic level, that of understanding the real needs of users; most of the time in fact, as we engineers are unfortunately pretty used to, innovators lose themselves in questions as "why aren't they using this 'amazing' technology I made?", forgetting about real needs and to ask themselves "what is that they really want? which are their real needs?". These questions brought in many important aspects of the design process and the importance of pursuing a user-centered design from the very first phases of the innovation process and, even most important, iterating with the real users during each phase the development. Some of the other key aspects I have found interesting during the discussions were related to the problem of the standards, the necessary trade-offs that are made during the development of "sustainable" products, and all the problems linked to the production/distribution/deployment process of such technologies.

Beside the sessions themselves, I have also really enjoyed the in-between pauses and free time as I exploited them to interact as much as I could with people I didn't know to exchange opinions, thoughts and visions; I remember, for example, speaking very passionately with a guy from South Africa about my interest in developing low-cost rehabilitative technologies and co-designing them with local people using low-cost technologies, but he just exposed me his vision of the different mindsets between "westerners" and people from developing countries when approaching technological innovation. While, in fact, the innovation process, along with the ideas themselves that one can be "active" in changing the world around him, look pretty rooted concepts in our "developed" world, such mindset is not necessarily there in developing countries where people are mainly used to "re-act" and take things for granted, and, there, I have really seen a good description of the southerner in me, with my Sicilian cultural heritage, with this "passive" and "re-active" mindset, being therefore inspired to find new ways of looking at these aspects of innovation.

As concluding remarks, then, I would say that participating to the conference has been a really enriching experience for me, mainly because I was given the opportunity of confronting with people having such different backgrounds and discussing with them, being this really inspiring and mind-opening. Therefore, I hope to attend again the conference but, next time, hopefully, with a really useful piece of technology to present.

Lausanne, 25.06.2014

**UNESCO Chair in Technologies for Development**

# Technologies for Development: What is Essential?

**Report on the conference** by Caroline Naef – EPFL Architecture Master Student

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## 1. Which sessions did I attend?

1) **HABITAT**: Water and Sanitation Technologies for Sustainable Urban Development
2) **ENERGY**: What are the Techno-socio-economic Aspects that are Influencing the Success of the Development, Implementation, Maintenance and Spreading of Appropriate Technologies for Access to Energy?
3) **HABITAT**: Community-Driven Innovation: Communicating Living Labs Essentials in the Developing World
4) **HABITAT**: What Technologies are Essential for Megacities of the Future to be Sustainable?
5) **ENERGY**: Identifying Opportunities and Constraints for Women in the Renewable Energy Sector

## 2. Views on those sessions?

First, a general remark: it was very helpful to have themes for the sessions. However, I found the sometimes misleading (for example, the session on Water and Sanitation Technologies were sometimes very broad and not related to habitat directly, and more on energy, agriculture, etc.).

### 1) HABITAT: Water and Sanitation Technologies for Sustainable Urban Development

This session was very interesting and broad, and well-coordinated. All of the presentations were different and yet related to one another. The examples were from different parts of the world, thus showing the projects are on-going everywhere (India, South Africa, Senegal).

I was astonished to learn that only 8% of wasted water in treated in Indian villages, and that solid wastes are still removed by human force.

My favourite presentation was about the VUNA Project, which had the goal to use urine as a fertilizer for agriculture (by utilizing phosphor and nitrogen).

The Blue Diversion Toilet developed by EAWAG was very professionally made and presented, though I did not quite understand why they did not use a sitting toilet, seeing how dirty the toilet were after usage.

### 2) ENERGY: What are the Techno-socio-economic Aspects that are Influencing the Success of the Development, Implementation, Maintenance and Spreading of Appropriate Technologies for Access to Energy?

This session was well-coordinated and with really good examples. I learnt a lot about why projects can fail and how they should be thought from the beginning.

I especially appreciated the presentation on "Holistic Approach to Energy Supply in Hospital in Cameroun."

It was very interesting to see the issues related to solar installation, which often fail due to the low battery life and the lack of follow-up.

3) **HABITAT**: Community-Driven Innovation: Communicating Living Labs Essentials in the Developing World

This was a session with good energy and a less formal atmosphere, which was very nice. However, the presenter did not explain what Living Labs were (the main point of the session), and so it was only explained during the last 15 minutes of the session, which was a pity.

Some presentations were interesting but not about innovating technologies ("Media Living Lab in Senegal"), explaining how radio is good for young working women. This was just an interesting fact to know that media could be used to let women know about associations to help them.

4) **HABITAT: What Technologies are Essential for Megacities of the Future to be Sustainable?**

Again, the session was interesting, but I found the title quite misleading for some presentations. Some presentations were again too technical ("Critical Study of Utilization of Silico Manganese Slag in Concrete" and "Effect of Inorganic and Organic Fertilizer Amendments) or too general and without a technological innovation ("Technology Justice in Urban Service Provision").

I absolutely loved Margarita Gomez-Galvarriato Freer's presentation about "Essential Sustainable Water-use Technology" which was a very concrete project with extremely interesting facts and studies, which can be applied to many other southern regions of the world.

5) **ENERGY: Identifying Opportunities and Constraints for Women in the Renewable Energy Sector**

This session was very interesting. The presentations were extremely well and the presenters very critical. They explained how projects often have the name "women" to get more financial aid, though in practice it does not occur much. The variety of projects and locations was great: some focused on more theoretical aspects, other on financial aspects, other on social aspects, etc.

## 3. <u>How did you benefit from the conference?</u>

The most interesting thing was to see how this kind of conference is organized. In each session which I attended, I thought that some presentation were of a very high level, and others not so interesting, during which people would leave to go see other sessions (either because too technical, or because you would not really learn something new).

Meeting new people from around the world was obviously a great opportunity, even though I did not have a particular purpose (a thesis about slums in India for example).

The key-note addresses were extremely interesting and well chosen. And some presentations were extremely interesting, and they gave me ideas or directions to follow for my Master Thesis. The names of many organisations were also very useful for me, for when I will be looking for internships or work opportunities.

# Report on Tech4Dev conference

I really enjoyed the Tech4Dev UNESCO conference. Actually, it was the f rst conference I attended, so it was a very exciting event for me.

## 1. <u>Which sessions did I attend?</u>

- First key note : Shashi Buluswar
- The Openness paradagim
- Development engineering : unif ed approach
- Second key note : Karen Scrivener and Jean-Yves Puidoux
- What are the Techno-socio-economic aspects that are inf uencing the success of the development, implementation, maintenance and spreading of appropriate technologies for access to energy
- Sustainable development of technology solution in Emerging countries : case studies
- Third key note : Anil Sethi
- Living Labs
- Catalysing innovation through targeted scientif c training capacity building

## 2. <u>Views on those sessions?</u>

First, I was surprised about Sashi talk : he said that to improve developing countries agriculture, we have to make them produce more fertilizers, witch means, for me, trying to adapt the bad monoculture occidental model to these countries, witch is a huge tecnico-socio-economico mistake in countries where the small cultures model is really spread and the soils can be quite poor. He also said that energy should get cheaper in those countries so that everybody could have access to it. Actually, I think that the contrary should be done : have higher energy prices so that investments can be done to have better electricity networks and greener energy plants. To me, the problem of the access to energy should be addressed the other way around : by reducing poverty via employment rather than by reducing energy costs.

I was also surprised to hear that many projects face the problem that the people do not use their products as much as they say, for water f lters for instance, and that things were done to add devices that measure if the product is used. Even if it is good to be able to quantify how the projects impact the people, I though that this is a meaningless cost if nothing is done then to improve the f lter or to educate people to the importance of water f ltering.

The open and DIY movements really interested me, and I though than it was way better than going to a developing country to sell a product. As the proverb say : "give someone a f sh he will eat once, teach him how to f sh, he will eat all his life". In this direction, the living labs seem to me to be a great way to implement essential techs in developing countries.

All the solar energy projects touched me because, I am currently choosing an energy master, so all the energy-related questions interest me, and I was glad to learn how much energy access via solar panels can change people's life. However, two points sadden me : f rst solar panels cannot be easily recycled, as for batteries that go along with them, and I though all these projects should meet to act together, rather than seeing each other as competitors!

I was quite skeptical about all the mobile heath and all the ICT's as there is so many projects being done in this direction, and once again no unity between these projects. Moreover, I do not like the idea of human being becoming more and more dependent of their smartphones. But I have to admit that some mobile projects were really good as the

one for eye's diseases detection in China.

The second and third keynote talks were really brilliant to me. The one about concrete was really great because, it emphasized a source of pollution and costs that seems inevitable with the extension of cities but in reality can be easily addressed. The one about the city of Lausanne was interesting as it showed that pollution, and energy consumption is not a fatality, and is mainly a political and f nancing problem. The one that really fascinated me was the last talk, by Anil Sethi, but I was so interested by his talk that I did not take time to take notes, so I do not remember all that he said. Can we f nd his slides somewhere online by the way?

Finally, I though that the conference level was quite unequal, as some talks were brilliant, and others more common.

### 3.  How did you benef t from the conference?

First of all, I really enjoyed meeting so interesting people from all over the world.

Also, I really liked how well organized it was, with a good time management, a great service, and the very nice Lavaux visit.

If I have to point out a negative point, as it was said on the last day, I think it is too bad that so many experts and projects leaders meet in such a conference, and spend their time to explain what is their project about rather than trying to act together, to unify efforts, and/or launch projects all together. Even the hackathon was composed of multiple projects done about the water issues, but done separately with no unity. In my view, UNESCO should do more not only to do a networking and communication event but a meeting were the essential problems are classif ed (with was not done, even if it was the purpose of the conference!) and the strategies to address these problems thought together, with common objectives.

Thank you very much to have given me the opportunity to take part in this event!


Alexandre Gubert

# Technology for development conference report

Liudas Mikalkevicius
2014

I am very lucky to have received the IDM scholarship for attending the Technology for Development 2014 conference. I have actively participated throughout the whole time. This enabled me to learn new things, meet many inspiring people from all over the world and make new connections for both – my personal and professional life. To top all that, a trip to UNESCO world heritage site was wonderful!

The event started with welcome address. The ceremonial mood and excitement was in the air. However, the talks could have been shorter and more influential. Overall, it went smoothly and in a timely manner.

I then proceeded to the ICT discussion about the openness paradigm. The discussion started with the hosts presenting themselves. They could have taken more time to do that. First speakers presented the innovations they managed to implement with severely constrained budgets. The talks were inspiring, even though they had almost nothing to do with ICT. These innovations provided a very good understanding what the countries in the developing world have to deal with. It was a bit disappointing that the inventors of these ingenious and very affordable innovations did not start to commercialize them. During the second part of the session some interesting internet platforms for sharing knowledge were presented. The ideas were terrific but the style of presenting was very complicated and it was hard to catch the scope and the problem these platforms address. In general, I think that the moderators failed to maintain the flow and consistency of a session. The public could have been better involved. The separate topics were really good. At this point I was afraid that the conference was too academic. I should remind that I study the management of technology and my primary goal was to observe the trends which were dominating the developing world.

To understand better the scientific content I attended a session in the medical field the next day (I have a deep background in life sciences). This session was considerably better than the previous one. The fluency was much better and the presentations seemed to have been complementing each other. I had met Jose E. Quesada and his wife earlier during the conference and I was waiting for his speech. I found out about the mHealth boom and I was amazed how many applications people find for smartphones when it comes to the healthcare in developing countries. I also appreciated the simplicity of the new technologies. One more time I was reminded that people in the developing world do not have neither smartphones nor internet connection and sometimes not even electricity. I liked the presentation by Jane Katanu who clearly emphasized the problem in some poorest regions in Kenya concerning the childbirth and presented her research to use mobile technologies to organize appointments. The last presentation by William Bosl was very interesting as well, however it seemed to be hard to implement at larger scale in near future. The general impression of the session was really good. I have learnt about the trends in mobile health and got some very interesting ideas to think about.

The afternoon session of day 2 was by far the best session of the conference! I was attending the ICT case study session. It was the Woodstock of this conference for me! Not only all attendees seemed to be impressed but many people later expressed regret not to have attended the session. What was so exceptional about it? There were people presenting how they successfully solved some of very important problems. I had met Paul Needham earlier in the conference and I was immediately impressed by the simplicity of a person. At the same time he has such an extraordinary skill to lead a

company which provides solutions to the poorest people in India. The session was very inspiring because applying the knowledge to tackle the problems is the main idea about helping the developing countries. An example of a failed solar energy provider which was mentioned also gave a critical perspective that not everything works out in real life compared to the theoretical models which were mainly presented during other sessions. Professor Balaji Parthasarathy gave another great speech with regrettably only two examples of several due to the lack of time. The presentation emphasized some of the most important problems of adopting the technology in the limited income economies. It also gave insights into how should the new technologies be developed to make it possible to commercialize the technologies in some specific countries. The general impression of the session was excellent. Presentations were easy to follow which led to a lively question and answer session afterwards. The session was also inspiring and made people think about new possibilities and bringing new technologies to the developing world. The tourist train ride and wine tasting which followed were very successful – weather was beautiful, landscape – inspiring and everyone loved to learn something new about vineyards of Lavaux. The Twitter photo contest was a very nice initiative but many people did not have a mobile internet connection which reduced the popularity of the contest.

On the third day I attended another medical session about implementing mobile health platforms in low-resource settings. This was the second best session I have attended. The presentations by Araya Medhanyie and Andrea Beratarrechea were very informative. These two discussions gave a lot of ideas about the challenges that rise in implementing the mHealth platforms. For example, some people do not follow up on doctors' appointments because they are busy all day and cannot find time. In addition to that, people in different countries (which are still neighbours to each other) have different preferences for texting, calling or using mobile internet. During the same session Kate Ettinger presented another serious issue about mobile health application design and ethical issues that arise from using these apps. The presentation was exceptional because of the style and simplicity. It must have been a good example to others about using visual aids while presenting. Lastly, the session provoked a vibrant discussion in the end which lasted well into the lunch break. It was a great opportunity to observe what troubles most of the scientists at this point. It turns out that the usage of private data and exchange across borders is a very pressing issue. A proposed solution was that those who mine the data gathered from the developing regions should at least give something back to those regions eventually.

The last session I attended during the conference was in the ICT field about low cost data communications. The session was not bad in quality and raised some very interesting ideas about mobile data usage and access. However, neither Facebook drones nor Google satellites to provide mobile internet were mentioned. These technologies are a huge deal in the technology world at the moment. However, the presenters gave some interesting insights how to minimise the infrastructure needed to sustain communications and how to optimize the transmission. An interesting concept was proposed about having a "mail man" for mobile data (a person would travel between areas with internet coverage and bring the data to places without internet coverage). In general the session was quite good. The presented material was quite deep and rather hard to follow but the ideas were very good. The session was rather consistent.

In conclusion, I restate that I am very lucky to have participated in the Technology for Development conference. It gave me very valuable insights into the current trends in the low income countries. In addition, I was able to connect with outstanding attendees. I think in the coming years the conference should attract more entrepreneurs because it is an inevitable part of bringing the technology to the developing world. Some sessions could be moderated more professionally. Public should be more involved into the discussion. Almost all sessions lacked flow and continuity of ideas. I would also reconsider the need to have a return on the previous sessions. It takes time, but the summary is quite chaotic and it is hard to understand what had happened during these sessions. These are only small drawbacks to the conference which was outstanding. The organization was just perfect - IDM did an excellent work! The food and catering were amazing and everyone appreciated that. Finally, I really loved my time in the technology for development conference and I hope I can come back the next time!

# Report on the Tech4DEv conference: point of view of an attendee

## 1. Personal information

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## 2. Introduction

Following the UNESCO Tech4Dev conference held from the 4th to 6th of June, the present paper (required by the association IDM at EPFL) gives my personal evaluation of this event. For this purpose, I wanted to come back on four points related to the organization, the attended sessions, the quality of the content and the personal experience/benefit from the conference.

## 3. Organization of the conference

Concerning the general organization of the conference, I wanted to highlight the high quality of the provided services. The information provided by the program and the organizers was clear and useful. The timing of the overall conference was respected and more important; the timing of the presentations was well organized, leaving enough time for questions and answers (Q&A). In my opinion, this is as important as the presentation itself. The Q&A give a real strength to the presented information. It is a process by which the audience and the speaker shares knowledge, understanding of the topic and maybe enable future partnership.

The representation of a large number of countries worldwide gives both credibility to the conference and enriches the exchanges and experience of the participants.

The general setting of the conference has enhanced the networking opportunities. The social event was a great way to facilitate communication in a friendlier environment. But other small details have also played a great role. At the Swiss Tech Center, I was first surprised by the number and size of the tables available for coffee breaks and lunches. But I soon realized that this configuration enhance the interaction between people because of the proximity and the lack of space that push you to join a table with unknown persons.

## 4. Attended sessions

|  | 4th june | 5th june | 6th june |
|---|---|---|---|
| **Morning** | Posters | How Can We Co-design Technologies with (and not for) Vulnerable and Poor Communities? <br><br> Session Leader: Dr. Andrés Felipe Valderrama Pineda, Aalborg University, Denmark | Low-Cost, High-Tech and Crowd-Sourced Solutions for Better Water Management – Opportunities and Challenges <br><br> Session Leader: Dr. Tobias Siegfried, hydrosolutions Ltd., Switzerland |
| **Afternoon** | Up-Scaling Sustainable Pro-Poor Energy Solutions: Addressing Stumbling Blocks <br><br> Session Leader: Dr. Albrecht Ehrensperger, Centre for Development and Environment, University of Bern, Switzerland | Sustainable Deployment of Technology Solutions in Emerging Countries: Case Studies <br><br> Session Leader: Ms. Jennifer Brant, Innovation Insights, Switzerland | Catalyzing Innovation through Targeted Scientific Training and Capacity Building <br><br> Session Leader: Prof. Federico Rosei, UNESCO Chair in Materials and Technologies for Energy Conversion, Saving and Storage. |

<u>*Up-Scaling Sustainable Pro-Poor Energy Solutions: Addressing Stumbling Blocks*</u>

Successful stories from researchers in the implementation and up-scaling energy solutions. Microfinance approach with the company Blue Orchard: investments in solar, Biogas and efficient cook stoves. Analysis of the failure of a solar panel project in Pakistan. Every speaker underlines the need of putting the end-user first and a good understanding of the cultural and market context.

*How Can We Co-design Technologies with (and not for) Vulnerable and Poor Communities?*

A good lesson on co-design and understanding the priorities and the needs of the populations. Speakers underline the importance and difficulties to adapt technologies in different political and cultural contexts. They insisted on the implication of the population at the beginning of the decision process and on the importance of the local knowledge. More effort should be placed on developing participatory approaches for technology design and implementation.

*Sustainable Deployment of Technology Solutions in Emerging Countries: Case Studies*

Very inspiring talks that brought mainly the point of view of the private sector on how to implement a sustainable technology in developing countries. Presentation of new concepts and technology design (Kubio). Analysis of business model failure and and success. "Sometimes technologies fail, not because of their design but because of their implementation and business model".

*Low-Cost, High-Tech and Crowd-Sourced Solutions for Better Water Management – Opportunities and Challenges*

Good insight on low-cost high tech solutions for assessment of environmental parameters. The use of low-cost weather stations or low-cost already available cell phones for water management, coupled with GIS tools gives interesting opportunities for developing countries to gather high quality data needed for engineering and environmental management.

*Catalyzing Innovation through Targeted Scientific Training and Capacity Building*

Not developed here, unfortunately I had to leave early to solve a last minute problem link to my travel to Burkina Faso planned the day after.

# 5. Quality of the content

The general content of the conference was very good. I wanted to underline the outstanding quality of the presentations of the keynote speakers. Their messages were clear and very inspiring. Topics and backgrounds of the session speakers corresponded to the topics of the conference and gave full credibility to the activities of the UNESCO and the CODEV.

# 6. Personal experience/benefit from the conference

As aforementioned, the quality of the services and the organization gave the opportunity to attend the conference in the best possible environment. The social event as well as the breaks (after the presentations, coffee breaks and lunches) provided good opportunities to exchange with people on various topics. I had the chance to establish contact with the speaker from QualComm Company which is financing projects in developing countries linked with communication technologies. We exchanged a lot about projects I am also following in Africa which might open to a future collaboration.

In my opinion, the strength of this conference was the interaction between the research sector and the private/business sector. In the different sessions I attended, I had the chance to benefit from the experiences of these two sectors. I came to understand the need of both: "to have a successful technology, design and implementation cannot be separated", "you don't fit a community in a technology, you fit a technology for a community". And to do so, you need both developers and businessmen that will help you to make the technology sustainable (environmentally speaking, good design or "self-sufficient" thanks to an appropriate business plan).

I have also understood the strength of co-design and the use of the local knowledge that reinforce the suitability and acceptation of a new technology.

To sum up, a good technology is not only a good design, robustness and usefulness; it relies also on acceptation, understanding of the needs of the population and adapted business models that ensure perenity and self-sufficiency.

I had experiences in research, technologies design, gathering of local population knowledge and needs but I had little knowledge on the private/business sector approach in these domains. I did understand that analyzing failure is as important as studying successful stories. This conference inspired me a lot for my future projects and I hope to be able to apply the presented concepts in technologies for development.

# Report on Tech4Dev Conference, 3rd – 6th June 2014

## Tonima Afroze

Since I am a student of Biomedical Engineering, most of the sessions I attended at the Tech4Dev Conference (3rd – 6th June 2014) were within the Medicine topic. My minor is in Computer Science and I am working on telemedicine, which also influenced my choice of sessions. Below are descriptions of sessions that I attended and how I benefitted from the conference.

**Attended Sessions**

At the Tech4Dev conference, I attended the following sessions (in chronological order):

Medical – Appropriate Medical Devices: From Bedside in Resource-Constrained Contexts.
Medical – Technology in Global Health: Exploring New Paradigms
Medical – Facilitating and Stimulating Inclusive Design and Innovation
Medical – Strategies for the Successful Implementation of Mobile Health (mHealth) in Low-Resource Settings
ICT – Low Cost Data Communications for Sustainable and Environment Sound Development

**View on Sessions**

For each of the sessions, my views are described below.

*Appropriate Medical Devices: From Bedside in Resource-Constrained Contexts:* This session was very rewarding since it gave very concrete information about a number of products that have been developed. It highlighted the importance of knowing the local context well in order for a product to succeed. Especially interesting was the mosquito control box, since it provides a very useful tool towards the most dangerous animal to humans.

*Technology in Global Health: Exploring New Paradigms*: This session gave insight on ways to improve the health of very large groups of people – for example patients with chronic diseases or mothers-to-be. I learnt in greater detail how SMS messages can be used to improve healthcare.

*Facilitating and Stimulating Inclusive Design and Innovation:* Riding in the same bus as others that were going to the same session (and working in the same field) was appreciated, as it facilitated finding and talking to people with similar interests. Especially interesting was the presentation on 3D printing medical equipment in Haiti,

a relatively simple solution, which has potential of expanding and helping in many other places of the world by making the models that were used to print out different parts freely available online.

The presentation on assistive technology for the population with motor disabilities in Columbia was quite relevant for me since I have been taking a course on assistive technology for individuals with motor disabilities during this semester. Andrea Kubicki's presentation was interesting since she did her work as a student, just as I am, and managed to implement it and get results.

*Strategies for the Successful Implementation of Mobile Health (mHealth) in Low-Resource Settings:* I am interested in working with mHealth or telemedicine after my studies, which is why this topic was especially appealing to me. Balwant Godara mentioned the Foundation for Innovative Diagnosis in the talk, something which is useful for me to investigate further for my own work. Kate Ettinger's talk on ethical considerations provided a different angle to healthcare solutions than the usual, which was quite interesting. An important consideration that was discussed during this session, was to make the primary goal of research to give back to those from whom data was collected. This will encourage individuals to give more information, since often times researchers take data from a population, which then never finds out about the results of the research and therefore get no direct use of it themselves.

*Low Cost Data Communications for Sustainable and Environment Sound Development*: Since my minor is in Computer Science and I have an interest in telemedicine (which involves a lot of data communication), I chose to attend the ICT session. Unfortunately, many of the presentations were too technical and not always very pedagogically presented and I could not follow most of them.

In general, I have a positive view of all of the sessions and have gained knowledge from them, except the last one, which was difficult to follow. In most sessions, the presentations were longer than expected, leaving little time for discussion unfortunately. I believe more discussion time would have been useful.

## How did you benefit from the conference?

I benefitted by the conference by learning about new technologies and meeting a lot of interesting people in the same field as I am in. It has been very inspiring, and I am quite certain it will help me pursue my desired career. I have made many new acquaintances that work within my field that I will keep contact with. Through the presentations, I have found out about a number of organizations that can be useful for my current work with telemedicine.

Benoit
Villatte
02.07.2014

Firstable, I would like to thank all IDM for giving me the opportunity to attend to this international conference and meet great people. Without your sponsorship, It could not be possible.

**Which sessions did I attend?**

As I study Civil Engineering, I decided to follow sessions which offered direct connections with the habitat, cities and fight against poverty.

- Day 1 : *Water and sanitation technologies for sustainable urban development*

- Day 2 (AM) : *How can we co-design technologies with (and not for) vulnerable and poor communities ?*

- Day 2 (PM) :  **None**, but I had planned to choose *What technologies are essential for megacities of the future to be sustainable ?*

- Day 3 : *How can we co-design technologies with (and not for) vulnerable and poor communities ?*

Benoit
Villatte
02.07.2014

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## 2.      Views on those sessions?

In all of those sessions, interesting things has been treated. According my point of view, sometimes discussions lead to topics less interesting for me but my curiosity never failed. Particularly the first day, I appreciated the diversity of speakers and actors. Projects they introduced to us were full of good idea, responding directly to the problematic of the session. Some of them was a bit "western" from my point of you. Or too complicated for local community, so leading to a non-cooperative development. Discut about it was also interesting. Ideas born from ideas, isn't it ?

The last sessions I have chosen was less technical. Social questions was more treated but it was still very rich.

## 3.      How did you benefit from the conference?

I met great people and great ideas. Our common envy of a fairer world, of reducing extreme poverty by giving access to simple but efficient technologies make this conference a very pleasant moment. I learnt a lot, my curiosity was completely satisfied.