

The Nordic Frugal  
Innovation Society



# InnoFrugal 2015 Conference Report

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# The Nordic Frugal Innovation Society

## InnoFrugal 2015 Objective

The Nordic Frugal Innovation Society ry in partnership with the Ministry for Foreign Affairs of Finland, organized in Helsinki, InnoFrugal conference during 16-17 April 2015. The objective of InnoFrugal was to create a common ground for development of frugal innovations in developing countries and Finland/Europe so that businesses can generate practical, affordable and sustainable development solutions.

## Context Of The Conference

One of the most promising trends in global development policy is the integration of the private sector in advancing poverty reduction and sustainable development in developing countries and emerging markets. This trend has been visible for more than a decade but is growing stronger all the time as will be seen in the upcoming Financing for Development conference, Post-2015 Summit and the United Nations Climate Change Conference in 2015.

Closely related to this, donors, international organizations and civil society organizations increasingly engage themselves in creating platforms for and supporting the development of inclusive innovations for development, i.e. innovations that help improve the living conditions and welfare of the people in developing countries. Frugal innovations, in turn, are inclusive innovations for development with the special emphasis on reducing the complexity and cost of a good and its production. Frugal innovations have many particular benefits for poverty reduction and sustainable development, such as lower price and hence better affordability of a good or service, greater adaptability to local conditions, and increased durability of a good. Hence, frugal innovations create new business opportunities for low-income entrepreneurs and jobs, especially for young people, in addition to broadening the specter of choices for inclusion, social services and environmental benefits.

Based on the interactions with SMEs and entrepreneurs in developing countries, emerging markets and in Finland over the years, we see that there is a growing interest in creating frugal solutions for developing countries, emerging markets as well as for developed economies.



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## What The Conference Wanted To Achieve

InnoFrugal will be used to engage businesses and entrepreneurs, including startups, in creating and offering these inclusive and frugal solutions for developing country populations. Frugal innovations can also become important elements for the Finnish/Nordic economy in the form of new business activity and new jobs in Finland/Nordics.

InnoFrugal would also be a venue to exchange information on similar platforms in the Finnish, Nordic, EU and International markets, thereby creating a similar mindset and potential for future collaboration among various players across the national borders. Once the pioneering businesses start to adapt this concept, it would show a path for other entrepreneurs and SMEs to start offering affordable and innovative solutions to developing countries, emerging markets and even for Finnish, Nordic and European markets. This is a long-term commitment from our side. InnoFrugal, our event during April 16-17 2015, will be a step towards this objective.

## Results from the Conference

The core of the first edition of InnoFrugal are

- The Speakers and
- Panel Discussions.

The sessions on both days were headlined by 4 keynotes and over the course of 3 sessions each day; the rest of the speakers gave their talks.

The Attendees learnt

- from Navi Radjou (Innovation Strategist, Author, TED Global Speaker) that around the world, cost-conscious and eco-aware consumers and citizens are seeking “frugal” products and services that combine four key attributes: affordability, simplicity, quality, and sustainability. He told the attendees that to succeed in this frugal economy, established companies across sectors need to let go of their wasteful and inflexible “more for more” business model and mindset. Instead, they need to adopt the principles of “frugal innovation” to build agile organizations that can do “more – and better – with less.”
- from Rahul Panicker (Embrace Innovations) the lessons he learned over the Embrace journey on medtech innovation for BoP markets. Is there a way around the cost-quality tradeoff? Is low-cost the most important consideration? Are providers interested in saving patients money? Can we focus on building the product first and then deal with these issues? The answers according to him being yes, no, maybe, and definitely not, respectively.



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- from Cees van Beers (Center for Frugal Innovation in Africa, Netherlands) showcased two research projects: the frugal thermometer and the frugal weather stations initiative (Trans-African Hydro Meteorological Observatory, TAHMO). The frugal thermometer is one of the Centre's 'home-made' frugal innovations in which three Dutch universities collaborated. Under the umbrella of the Centre for Frugal Innovation in Africa, an affordable and safe medical device is being developed, adapted to local realities (such as the distance to a health facility) and taking into account cultural notions (e.g. explanatory models and categories of illness classifications). The weather stations initiative TAHMO is founded by Delft University of Technology in the Netherlands together with Oregon State University in the US and aims to address the lack of available weather data in Sub Saharan Africa by installing 20,000 frugal weather stations in the region. The TAHMO stations are frugal because of its use of innovative sensor technology. Furthermore, the stations are co-designed with local people. Under the umbrella of the Centre for Frugal Innovation in Africa a design challenge was set up in Ghana and Kenya.
- from Mikko Kauppinen (GE Healthcare Finland) about the Health Innovation Village - a healthcare startup ecosystem that was started inside GE Healthcare in Helsinki in 2014 and it's potential in creating frugal innovations in areas such as digital health. Mikko also talked about how they are involved in developing digital health technologies that will be more efficient and also lower costs for the end consumers both in developed countries and developing/emerging economies. He concluded with GE Healthcare Finland's goal in fostering these kind of innovations that will leverage Finland's strengths in technical know-how and entrepreneurial spirit.
- from Paul Duggan (Techshop) on how they are helping companies and cities across USA and Europe and how they see open and frugal innovations as the way forward. Paul compared the state of the Maker movement and it's value in fostering open and frugal innovations. He compared the state of affairs for search and internet when Google started in March 1996 and how that is where we are now in the development of the Maker Movement. How everything old is new again, the rediscovering of old skills and the pleasure and the enjoyment of making. He talked about how makers are the new engines of economic development and how new generations and types of SMEs are being created. He talked about why Scale matters, but in a new, different, transformative manner and how distributed, low-volume manufacturing is the key in the coming years and how TechShop is pioneering this spirit.
- from Elizabeth Sweeny (Frugal Innovation Lab, Santa Clara University) on how their Frugal Innovation Lab is leveraging the benefits of being in Silicon Valley and how they are engaging their undergrads and grad students in creating frugal solutions. She described how students at Santa Clara University's School of Engineering Frugal Innovation Lab learn how to address the needs of emerging market consumers while balancing the need for financial sustainability and navigating severe design constraints. Several project case studies from Mexico and elsewhere were discussed to illustrate how Frugal Innovation can be woven into University education, with the integration of corporations and field partners.



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- from Nigel Bolster (Peek Vision) how their break-through solution is using smartphones to offer affordable eye testing to people living in places with poor infrastructure and also as a capable replacement in Ophthalmologist rooms across UK and other developed countries as well. He told the attendees how the design approach of Peek Vision focuses on optimising for maximum impact through straight-forward integration into the existing healthcare provision workflows in low-income settings, as well as producing technically simple, low-cost, and easy to use devices. The kit they have includes Peek Lite, an open-source visual acuity app and Peek Retina, an adapter on the phone's native camera provides Peek with retinal imaging functionalities. The adapter and phone together have an end provide comparable quality to that of the hospital-based standard at approximately 1% of the cost. The intrinsic connectivity of the smartphone allows transmission of geo-tagged patient records and, potentially, diagnostic data. The ease of use and field of view of the Peek Retina ophthalmoscope represents a step change in handheld direct ophthalmoscopy. He concluded confidently that the intrinsic telemedicine capabilities from their work show promise in remote diagnostics and in integration with national screening programs.
- from Mika Vehnämäki (Ministry for Foreign Affairs of Finland) and Christopher Palmberg (Tekes) on how their new program BEAM - Business with Impact will help Finnish businesses to co-create inclusive solutions and sustainable development in developing countries and emerging economies while at the same time creating new businesses and growth in Finland. Vehnämäki also drew the links between frugal innovations and human rights based approach to development cooperation and poverty reduction.
- from Francis Mugane (Kopo Kopo) on how their mobile based payment system has leveraged the existing M-Pesa infrastructure and brought digital payment innovation for B2B scenarios in Kenya, Tanzania and other African countries. He described how most merchants are used to cash but now they are switching to digital payments. The reasons he listed were that sometimes because their customers ask for it or they have a money problem (theft) or it comes with something that they want or it's not painful to switch from cash to mobile/digital. Francis concluded with the value proposition from KopoKopo: Find merchants with a reason to switch now (the rest will follow), make sure you are targeting the right adoption profile and that Payments alone are not enough – give them other value-added services
- from Mark Bünger (Lux Research) about the current co-operation they are having with Fraunhofer Institute in Germany. Lux Research and the Fraunhofer institute are collaborating to identify and codify principles of Frugal Innovation, compare them with these existing frameworks, and explain them in the context of programs like Industrie 4.0 and America Makes. He explained the findings so far, and how the effort to apply frugal principles to corporate strategy is moving forward.
- from Cynthia Koenig (Wello Water) how a simple product like a rolling water container is changing women's lives in rural India by getting them more free time to concentrate on their daily jobs and education. Cynthia discussed the problem they are trying to solve at Wello: The time, physical and health burdens of water collection



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trapping families in a vicious cycle of poverty. The attendees learnt the need for more reliable access to safe water and how Wello after spending 18 months designing a product with input from the people who will be using it, created the Wello water drum solution. She talked about the importance of creating a minimum viable product and this consists of high quality (durable: 3-5 yr lifespan), convenient (ergonomic, customizable, replaceable + repairable), aesthetically pleasing (It has to look good!), hygienic (POU treatment, product ensures water, in the WW is clean; smart design prevents recontamination) and affordable (retails to consumers for an affordable price).

- from Liisa Välikangas (Aalto University School of Business, Hanken School of Economics, Board Member- Tekes) the innovation strategies and business models that work under resource constraints. Välikangas suggested on how to rethink resources such as using scarcity as leverage for innovation, witnessing resources becoming more imaginative and autonomous and how collaboration can gain scale (and diversity). She gave the example of Outokumpu and how under the resource constraint world it face immediately after the 2nd World War, they used existing and new knowledge in use flash smelting to be more efficient and productive. Outotec Flash Smelting eventually achieved a clear leading position as the world's number one primary copper smelting technology. Scarcity as Leverage can be used to give imagination a boost. The conclusion for the attendees was why not reduce costs 90% (not 10%) to rethink and redesign whole operating processes and think of how we can combine existing solutions (integrate/bricolage), scale up ambition and diversify collaboration to achieve these solutions.
- from Jaana Pelkonen (Sitra) about Sitra's project in which a group of leading Finnish firms committed themselves to providing the solutions needed to take us closer to a carbon-neutral Finland. She talked how the participating companies will be setting an example for others and encourages them to follow suit. This active participation of leading industrial companies in the transition process will expedite the required change and support the switch to renewable energy and sustainable economy. She also talked about how investors have also come to understand the carbon risk associated with investment portfolios full of carbon-dependent companies and along with climate risks, technology risks and financial risks they become part of their major investment criterion.
- from Mari Tikkanen (M4ID) on how their organization is partnering with UNESCO, WHO, Gates Foundation and other organizations in developing social innovation and entrepreneurship and creation of healthcare services. Attendees learnt they are developing a global awareness-to-action campaign about drug safety and the importance of reporting adverse drug reactions. Another project called iDeliver, seeks to design a digital decision support tool for skilled birth attendants to improve quality of care during intrapartum care and reduce facility based maternal deaths globally. A user centered design approach is used to design a tool around the needs of midwives taking into account their specific work environment and challenges. M4ID is also designing, producing and launching a new digital activist service to increase understanding and awareness of maternal health, provide engaging participation options and enable community building as well as self organization in support of MNCH programs worldwide, the first phase of which is currently being implemented in India.



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- from Uttam Banerjee (Ekam Eco Solutions) on what technologies we can use to ensure that we do not pollute the environment, what systems we can use to make sure nothing goes wrong even after decades and how sanitation as a whole becomes a sustainable model. By using a combination of technological intervention, system innovation and integration, a sustainable model in sanitation can be created.
- from Jessica Colaco (iHub Incubator) on how a journey that started in 2007 created a space that became one of the leading incubators not just in Kenya but in Africa. Jessica talked about the need for Frugal Innovation in Cities. She listed how affordability is the key along with knowing your customer and building a new value chain. Some good startups from iHub such as MFarm, Ushahidi, BRCK, and Kopo Kopo that have created sustainable and affordable solutions in the African market place were highlighted.
- from Tom Sebastien (Innovation Centre Denmark -India) about the journey towards finding fortune at the base of the pyramid. He gave examples of companies introducing plastic sachets for consumer goods which is affordable to poor people but not affordable for the environment and ecosystem. He proposed that this is where sustainable innovation as a concept can come together to hand hold frugal innovation to be governed and moulded using the ideas of circular economy and vice versa. In this talk he elaborated where this merger of frugal innovation and circular economy ideas are in place and how companies can envision a similar strategy for growth.
- from Simo Kohonen, (International Organisation on Migration -Helsinki) about how the 21st Century is the century of human mobility and migration. They learnt how we can no longer think about our economies, societies or cultures without thinking about human mobility. The links between migration and development of countries of origin and destination are recognised and states are adopting policies and systems that enhance the positive impact of migration into their development and economic strategies. In his talk Simo introduced the global migration drivers and presented examples of how diaspora can be engaged for the development of their countries of origin and how the remittances from migrants help to boost and develop the economies of their countries of origin.

There was also an informal workshop at the end of Day 1 (April 16th) titled “Hi-tech Low cost – How do we move forward?” This meeting helped explore possible cooperation on projects to engage companies and researchers in developing and bring hi-tech low cost solutions to target markets. The moderators for this session were Peter Hesseldahl (Author and Innovation Strategist from Denmark) and Sara Ballan (Senior consultant, Confederation of Danish Industry and Project Lead with BOP Learning Lab Denmark).

In the first panel discussion setting on April 16th, the “High Tech-Low Cost” report prepared for Nordic Innovation was discussed. The panel consisted of Sara Ballan from Confederation of Danish Industry, Rasmus Wendt from Nordic Innovation, Tom Sebastian from Innovation Centre Denmark- Bengaluru, Elizabeth Sweeny from Frugal Innovation Lab-Santa Clara University and was moderated by Peter Hasseldahl. It provided room to scrutinise the report and engage the



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audience on how and which technologies are changing the playing field for frugal innovation. The discussion also focused on what all this means for Nordic companies and on how to move forward. The conclusion from the discussion was that in the context of developing countries and emerging markets there should be active input taken from the local partners from the very beginning when creating products and services from their markets. Also, the regulatory regimes are different between Nordic and developing countries and sometimes this actually is enabling the businesses to try something innovative in the developing countries because they are not too burdened with regulatory procedures.

In the second panel discussion setting on April 17th, there was a discussion on “Are frugal innovations speeding up the energy revolution?” Heli Antila (Fortum), Peter Lund (Aalto University), Mikko Syrjänen (Wärtsilä) were the panel members and the discussion was moderated by Petri Allekotte from Aalto Global Impact. It provided lively discussion and Q&A between the audience and the panel members on the energy infrastructure and business models that are required especially in developing countries and emerging markets. The conclusion was that these business models are still evolving and companies like Fortum and Wärtsilä are continuously learning how to make inclusive business as part of their business agenda.



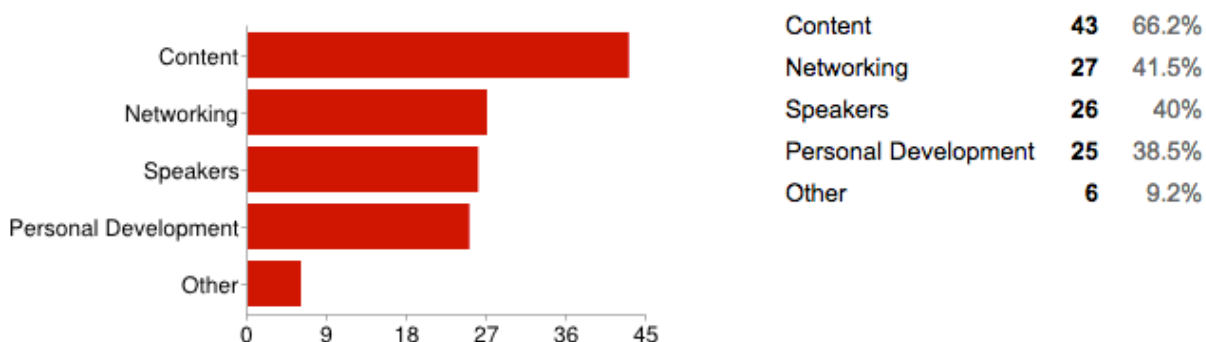


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## Attendee Survey Response

We conducted a survey post event and based on 65 responses received, we can begin to see how InnoFrugal 2015 was received and what the attendees wanted to see in the 2016 edition.

### Please specify the main reason(s) for attending InnoFrugal 2015:



The main reason for attendees to be at InnoFrugal seems to be the content. The rest of the issues such as networking, speakers and personal development were also on their agenda but content seems to be king. Some of the attendees also said that funding and investment issues were also something they wanted to see at the conference.

### Did the conference fulfil the reason for attending?

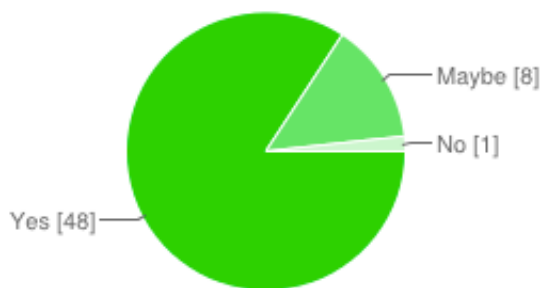


We can see above that 83.1% attendees we surveyed have answered positively on the question if the InnoFrugal conference has fulfilled their reason for attending.



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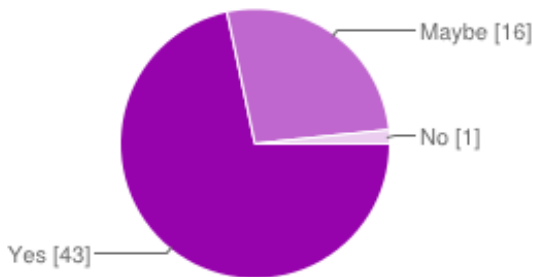
## Would you recommend InnoFrugal to others for the next edition in 2016?



Yes	<b>48</b>	73.8%
Maybe	<b>8</b>	12.3%
No	<b>1</b>	1.5%

87.6% of the attendees surveyed responded to the question of whether they will recommend the 2016 edition of InnoFrugal to others and an 86.1% were positive in their recommendation.

## Would you be interested in attending InnoFrugal in 2016?



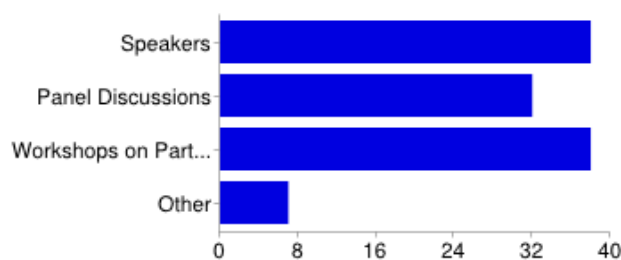
Yes	<b>43</b>	66.2%
Maybe	<b>16</b>	24.6%
No	<b>1</b>	1.5%

A very overwhelming 90.8% of the attendees surveyed said that they would be interested to attend InnoFrugal in 2016.



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## What would you like to see at InnoFrugal 2016?



Speakers	<b>38</b>	<b>58.5%</b>
Panel Discussions	<b>32</b>	<b>49.2%</b>
Workshops on Particular Topics	<b>38</b>	<b>58.5%</b>
Other	<b>7</b>	<b>10.8%</b>

This above question led to a very interesting set of replies from the attendees. There is high interest in listening to speakers and attending workshops on particular topics such as healthcare, cleantech, infrastructure but panel discussions also received considerable interest from the attendees.

*See below few of the actual quotes we received from the attendees from the survey we conducted post event:*

"I was very satisfied with InnoFrugal. I could broaden my thought about worldwide changes and also frugal innovations."

"Happy to attend in 2015 and waiting for the next conference in 2016."

"Frugal innovation was a new concept to me, and I attended the conference in lieu of a coworker who couldn't make it. Most topics were very well presented and easily understood by someone who only had a brief introduction to the subject matter. Great job organizing the event!"



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"Separate sessions for separate business segments; healthcare, infrastructure (energy and water), education, B2C etc."

"What I would love to see and what is missing in 99.9% of the seminars or conferences is "the opposite view".  
Why does, in this case, frugal-innovation, not work. And not so much a note here and there about that it doesn't work everywhere, but really someone who can explain why and give cases. The interesting thing that could happen is that there real conversations might start. Otherwise it is preaching to the converted."

"Very good speakers, smooth organisation!"

"The conference showed that frugal innovation is an upcoming, particular economic issue against the backdrop of an emerging globally aware human ecology with a social-ecological and a techno-economic side."

"Case examples or development of future frugal solutions from a company. This might touch upon issues with confidentiality though."

"Far exceeded expectations. For 2016, make it a Nordic event!"



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"For 2016, would like to see Speakers, Panel Discussions, Workshops on Particular Topics and match making related to the BEAM programme."

"Loved it! Can't wait for next year."

"I would have hoped for more interaction: discussions with good amount of time between the experts and attendees and other means. Also workshop(s) around specific, concrete themes/problems that aim to find solutions or insights for a set task would have been welcome."

"Really great overall - organization, content, communication. The only thing to make it better would be more of everything. More people to meet, more presenters and panels to learn from. It would be nice to see more things "hands on" - the actual devices people are making, and understanding how they engineered them."

"10/10 - one of the best quality event I've ever been involved. Funding as a startup entrepreneur would be interesting to hear more about."

"I was very impressed! Not sure the program needed to be quite as packed, even less, and more curated would've sufficed, and perhaps left more room for networking? The breaks were quite few and far apart!"



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## Conclusions and Recommendations

Based on the feedback we received, we know how successful the conference was in achieving its objective, and in fostering a mutually shared understanding of the conditions to create a common ground for development of frugal innovations in developing countries and Finland/EU. This in turn will generate interest towards developing practical, affordable and sustainable development solutions. But this is just the first step and the long-term success of this objective depends to a large extent on whether the policy makers, the big businesses, the SMEs, NGOs, Universities and individuals will indeed make serious attempts to integrate Frugal Innovations a priority. What the conference achieved was to prepare a unique setting in order to fulfill our objective. InnoFrugal will be an annual event and the second edition should be organized again in April 2016 as a 2-day conference with speakers, panel discussions, workshops and investor matchmaking sessions.

### *Our recommendations for the overall Frugal Innovation activities for 2015 & beyond are as follows:*

- Frugal Innovations need a strong voice of its own in Finland/Nordics/EU in order to build communities, and also to firmly integrate sustainable and affordable solutions on common grounds into Finnish/Nordic/EU research agenda and funding policy.
- Focus on multi-nationally relevant co-creation infrastructures.
- The co-operation for InnoFrugal 2015 went very well between The Nordic Frugal Innovation Society ry and the Ministry for Foreign Affairs of Finland. This co-operation should build upon this experience and continue for InnoFrugal and Frugal Innovation activities under the BEAM program for 2016 and beyond.
- As the leading organization for innovation activities in Finland, Tekes should also become a partner in coming together with The Nordic Frugal Innovation Society ry to create long-term infrastructure for InnoFrugal and Frugal Innovation activities under the BEAM program for 2016 and beyond.
- Finnish innovation Fund, Sitra, is already enacting programs such as Carbon Neutral Society and Resource Wisdom. They should also be leveraged to create frugal solutions for Finnish and global markets.
- More Finnish/Nordic businesses (both big and small) will need to be made a part of InnoFrugal and Frugal Innovation activities for 2016 and beyond. Involve and collaborate with Industry confederations and organisations like Nordic Innovation more often.



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- Promote interdisciplinary training and education where it is necessary and useful. There should be more collaboration between natural sciences, engineering, business, design and sustainable development faculties. For example, there can be developed a Frugal Innovation Lab in a Finnish university similar to the one existing at Santa Clara University in USA.
- Institutional arrangements for exchange of ideas and networking should be sought more actively.
- Organise regular meetings, if possible, on specific challenges and their work programs.
- Create Business with Impact-BEAM B2B matchmaking events on the sidelines of InnoFrugal.
- Gather together investors and funding agencies involved in Frugal Innovations on the sidelines of InnoFrugal for networking and investing opportunities.
- The BEAM program and TNFIS can organise on 1 day every month a coffee session or business breakfast. Coffee events will have a “meet the Frugal Innovation Expert” event held in an intimate setting for up to 50 participants interacting with an eminent speaker/expert/business-person on frugal innovation and entrepreneurship related topics. The event can last about 2 hours, including one hour of discussion and Q&A.