

A photograph of a waterfall cascading over mossy rocks in a lush forest. The water is white and frothy as it falls, surrounded by vibrant green ferns and moss. The scene is captured from a slightly elevated angle, looking down at the waterfall.

KOLI
forum

KOLI THESES

Key Messages and Highlights 2013





KOLI THESES

BIOECONOMY AND THE SUSTAINABLE USE OF RENEWABLE RESOURCES

Forests and Water – the key resources for a sustainable and competitive bioeconomy

- Bioeconomy driving economy
- Resource efficiency, scarcity of raw materials and water guiding to the future

KEY MESSAGES AND HIGHLIGHTS

The Koli Forum - Background and goals

Leading experts, key decision-makers and opinion leaders gathered in Koli to emphasize the importance of urgent actions to boost bioeconomy, to find possible solutions and adaptations strategies and to discuss the type of future we want. It was agreed that if not undertaking further action to protect and sustainably use natural resources will be very costly for societies. To prepare ahead the resource challenges and challenges caused by changes in the environment would be fundamentally important, and one of the key tasks for all leaders.

Increasing competition over diminishing renewable resources is on the rise, due to e.g. unsustainable use of resources, population growth and climate change. As consumption increases, with increasing population and GDPs, countries are facing increasing shortage of vital renewable resources, such as freshwater, forests, energy, etc. Furthermore, climate change threatens the distribution and availability of many critical resources, and increases unpredictability. Growing challenges are threatening international peace and security. A big question in the discussions was if resource efficiency and more sustainable management of natural resources could be way out of such crises.

Governance, resource wisdom, scarcity and global conflicts, industrial symbiosis, together with new production and consumption patterns were discussed. Bioeconomy was seen as a driver – and a prerequisite - for sustainable economic growth, it can also provide flexibility in reaching planetary boundaries. Limiting the desires of all stakeholders was seen as an important part of realistic solutions in the future. Holistic approach in governance and long term strategies, empowering consumers, education and available information on natural resources were highlighted.

The aim of the Koli Forum is to serve as an international, forward-looking and informal discussion platform. The objective is to search out best solutions - with existing best knowledge but knowing that future is unknown - for a future that takes into consideration both the potential and the limitations of natural resources. The Forum also highlights new business innovations, brings opposite views into same table, and discuss the importance of governance and novel leadership.

Koli Forum has achieved its goal of becoming a trendsetting and advisory forum in the bioeconomy field and in the sustainable use of forest resources. This non-profit initiative is supported by a number of European and global leaders and by several development organizations, private companies, ministries and regional authorities together with the European Union.

Creating the Koli Theses – tools for implementing changes

The Koli Forum aims to formulate its results in the form of feasible solutions – The Theses of Koli – ready to be implemented from a local to a global level. Through the conclusions reached the Forum aims to actively influence on the decision-makers who shape our common future.

The theses are jointly processed and formulated during the Forum by the participants. The main messages of keynote presentations, the outcomes and implications of discussions during, and in-between the sessions are carefully documented. In addition, panel discussions and voting systems are used to enable the voice of each participant to be equally heard. All the participants had a possibility to actively participate the workshops formulating the thesis.

The Koli Theses are there to help decision-makers take responsibility for our renewable forest resources, sustainable economic competitiveness as well as social and ecological welfare.





Bioeconomy leading economy – towards resource wisdom

The messages from opening remarks by the Koli Forum Key Note speakers, H.E. Jayanthi Natarajan (Minister for Environment and Forestry, Government of India), Mr Ville Niinistö (Minister for Environment, Government of Finland), Dr Hanna-Liisa Kangas (WWF Finland), Dr Rajendra K. Pachauri (Chair of IPCC) encouraged farsighted leadership within all sectors, local actions with global perspective and sustainable development as prerequisite for economy growth.

Furthermore, the closing Key Notes, Dr Tomas Ries (Senior Lecturer, Swedish National Defence college), Ms Riikka Joukio (Senior Vice-President, Sustainability and Corporate affairs, Metsä Group), Mr Josep Maria Pelegri (Minister of Agriculture of Catalonia, Spain), emphasized the serious global effects of changing climate and changes in the availability of critical resources, and thus the urgency of actions – but highlighted also the ongoing actions and commitments already done in forest sector and in regional and local level policy.

Bioeconomy and resource efficiency - more holistically, resource wisdom - was seen to provide a way to sustainable economic growth possibilities and thus a way out of poverty for developing countries. Empowering consumers and right pricing should be part of the policy toolkit. A clear conclusion of the forum was that there is no sustainable economic growth without bioeconomy.

KOLI THESES 2013 – Measures to achieve the targets

“We shall use the abundant resources wisely and productively, and to identify fully the values of nature and the natural processes to the bio-economy”, Ville Niinistö, Minister for the Environment, Government of Finland.

Koli Forum states that, **the main driving force for a competitive bioeconomy** is market force (57,9 %); but we need also *government regulations and international multilateral agreements*.

It is time to start taking actions at local level in order to reach global targets (92,7%), even though we have not reached a global agreement.

Thesis 1

We have an urgent need to find the means to prevent crises and conflicts aggravated by climate change, increasing competition and unpredictable availability of diminishing renewable resources.

Thesis 2

Bioeconomy drives the economy and growth

Thesis 3

To enhance bioeconomy growth, governance is crucial

Thesis 1.

We have an urgent need to find the means to prevent crises and conflicts aggravated by climate change, increasing competition and unpredictable availability of diminishing renewable resources.

1 We need resource wisdom: more efforts to increase resource efficiency, management of resources and decrease the environmental consequences of use

Sustainable materials management can help improving competitiveness, contribute to addressing resource security concerns and create growth and jobs, in addition to contributing to environmental protection. When increasing resource efficiency, savings can be resulted in waste reduction and in better materials management.

Foster investments in best available technology on material, water and energy efficiency, and recycling of nutrients. For example, pay attention to new investments in the use of renewable resources, pay attention also to SME players besides big enterprises, concentrate on heat-cooling-electricity solutions.

2 Visionary countries and companies are needed to lead by example

Those who see the problem should lead the way. The financial opportunities are offered by public investments, smart cities and pension funds. Use these resources to lead the way!

Involvement of small and medium size companies and innovators is essential.

3 Prevent the use of non-explored fossil energy resources

A mechanism to limit the use of so far non explored fossil energy sources needs to be created.

4 Empower consumers

• **Empower consumers → to make resource wise choices**

- **Reliable product information**

- **Educate to raise public awareness**

The power of consumers should be used wisely. We should create a mechanism to represent the carbon and water footprint related to individual consumer product. This would put pressure on carbon efficiency of the production chain.

5

Develop communication

- **Be open to compromises and avoid extreme approaches in communication**

Journalists rather than experts should be involved.

- **Communicate opportunities offered by science and technology and what it means to ordinary people.**

To get full advance of new efficient technology education is essential.

- **Local communication of the global impacts**

Increasing ecological problems can at worst lead to tense public attitudes, including eco-nationalism. Emphasis should be put on understandable communication, availability and reliability of information.

- **Encouraging examples on success stories**

- **Use geographical map information and modern technologies with visual elements in communication.**

- **Educate to raise public awareness**

For reaching awareness on long term basis. Attention should be paid to ordinary people and people in the developing countries. Scaling up public information and educational campaigns is critical for raising household awareness, changing perceptions, and thus ultimately behaviour.

Prevent crises

Planning ahead, taking actions now to tackle the resource challenges and mitigate future risks would be fundamentally important. We need to build capacity to better understand and prepare for future risks. The economic and social costs of not managing security risks can be very high, effects of droughts and floods being a good example all around the world.

- Use UN peacekeeping forces to prevent crises to escalate conflicts and to help in case of natural disasters
- Establish transnational facilities for coordinating efforts for risk planning and crises management
 - Identify scarcity of natural resources as a primary cause or secondary driver of conflicts
 - Create fast and effective tools to avoid crises to escalate violent conflicts
 - Exchange information on lessons learned
- Concentrate on finding regional solutions besides national action, also in coping with disasters.

“Planning ahead is crucial for mitigating future risks. There is a growing concern, for example, that the world lacks the capacity to adequately respond to emerging water security risks. We need to ensure more proactive, rather than reactive, approaches to better manage future risks”, Rintaro Tamaki, Deputy Secretary-General, OECD



Bioeconomy drives the economy and growth

The demand for bio-based products is increasing. People's environmental concerns and climate change as well as the growing scarcity and increase in the prices of non-renewable raw materials is boosting the demand for bio-based products and services.

1 Consumer behaviour is the driver for sustainable business growth

- Branding and designing bio-based products
- Bio-based products need to have extra benefits for consumers
- Changing consumer behaviour in favour of bio-based products
 - Education and training
 - Empowering consumers by providing reliable product information
 - Knowledge of “environmental costs”

Social innovations, better communication, behaviour-oriented and social scientific approaches are needed to reach people better and to encourage change in every-day practices. Increasing public information and education is critical for raising household awareness to change perceptions, and behaviour. To empower consumers providing better and more trustworthy information is essential. Product information should include also carbon and water footprints.

Appropriate pricing of natural resources is a key measure to encourage more efficient and sustainable use.

2 Foresight and focused innovation activities facilitate the optimal use of resources

3

Reliable monitoring of renewable resources is needed

- Location and amount of resources, reliable measuring methods
- Open data on forest resources
- Available handheld devices to reach the information
- Laser-scanning for more accurate biomass (and carbon) estimates

Forests are one of the most cost effective actions for combating climate change. Activation on UN project REDD+ is one key tool to implement this in socially sustainable manner. To be able to successfully utilize natural resources, and implement these actions, it is most important to be able to correctly and reliably monitor the resources.

"Forestry represents one of the most cost-effective mitigation actions when it comes to reducing the emissions of greenhouse-gasses. In fact, we found very clearly in the 4th assessment report of IPCC that forestry represents one of the most attractive options for bringing about mitigations of emissions of greenhouse-gasses. Keeping that in mind, we need a very different approach on management of forest resources", Dr. Rajendra K. Pachauri, Chairman of Intergovernmental Panel on Climate Change (IPCC)

4

Resource efficiency is coming increasingly important factor for profitable and sustainable business

"One of the fundamental policy goals that must be at the forefront of the minds of all political leaders, policy-makers and practitioners in order to best tackle the resource challenges ahead is how can we radically improve resource efficiency in a cost-effective way and how to best manage this transition?", Dr. Rintaro Tamaki, Deputy Secretary General, OECD

As an example, OECD countries' general resource productivity has improved in recent decades: their material intensity (i.e. material consumption per unit of GDP) decreased by more than 42% between 1980 and 2008. However, still the overall consumption is increasing and, in addition, the amount of waste produced is still huge.

5

Financing pilot projects and demonstrations

Bold experiments and cross-sectoral cooperation are key issues for new bio-based, start-up businesses. The symbioses between global companies and SMEs will help create new businesses specializing in waste and industrial side-streams. Public procurement can provide a platform for new business opportunities. The bioeconomy provides large-scale possibilities for sustainable economic growth

Feasibility of bioeconomy has to be demonstrated. Public procurement can be used for speeding up sustainable business solutions. Companies and consumers only adapt to the bioeconomy if it is proven to be profitable. Currently the world still holds, for example, vast reserves for relatively cheap fossil fuels and in comparison, the production cost of renewable energy is still high.

More emphasis should also be put on looking for simplicity in local solutions (e.g. waste management).

6

Governance can enhance bioeconomy growth

- Removing barriers to using waste as a raw material
- Removing hidden things that support the use of fossil fuels



“We are living in a ‘carbocentric’ world. But we forget that fixing carbon by plants requires important amounts of water. At the same time forests are biotic pumps that impact precipitation patterns at continental level. Forest, water and carbon related policies should be integrated or will not be successful.” **Dr. Marc Palahi**, deputy Director, European Forest Institute EFI.

To enhance bioeconomy growth, governance is crucial

1 National foresight, vision and strategy processes to form a long-term perspective

Short term planning is the biggest single challenge for national governments, and companies, on the road to sustainability.

Emphasis should be put on the role of science to better inform decision-makers. This should include scientific panels in parliaments to look at long-term implications of policies.

Lead discourse on national (and organizational) values is needed– long-term perspective cannot be built on anything else.

“Planning ahead to mitigate future risk is key issue in making sure we effectively manage the transition to resource efficiency. There is a growing concern, for example, that the world lacks the capacity to adequately respond to emerging water security risks. To prepare for this we need to build capacity now. Water security is about establishing an acceptable level of water risk by weighing the costs of improving water security against the expected benefits, and ensuring that responses are proportional to the magnitude of the risk”, Dr Rintaro Tamaki, Deputy Secretary General, OECD.

2 Cross-sectoral governance and approach in strategy work, planning and decision making

“Our hierarchical, silo-based thinking at all levels is too static to address this dynamic reality. We are prisoners of our own industrial age thinking in the developed world and we need a historical paradigm shift. This means integrated approach with social, economical and ecological considerations through new governance model. Some companies and communities are forerunners, but governments have been slow to change”, Dr Mikko Kosonen, President of Finnish Innovation Fund SITRA.

3 Holistic approach to a bioeconomy by national governments

-In addition to holistic national approaches also more coherent policy approach is needed between countries globally, when transiting to a greener, more resource efficient use of natural resources.

-Theme-based governmental approaches shall be adapted.

-Governments must lead the way by supplying environmentally sound public services and infrastructure to foster the transition to sustainable consumption. Appropriate pricing of natural resources is an important policy measure towards more efficient and sustainable use of resources.

4 Ambitious and cross-sectoral goals, courage in leadership

5 Utilizing open data more efficiently for sustainability

6 Transparent and independent impact analysis and a systematic stakeholder process for all policy decisions

Partners and Supporters 2013



Project of Nature-based Tourism Development at Koli



Young doctors and doctoral Students were assistant reporters of Koli Forum, they highlighted the next 8 key topics which would be most important to boost bioeconomy and sustainable development:

- 1 Relationship of forests, water and climate change is a key factor in sustainable development, and should be better understood**
- 2 Differentiated responsibility and call for local/global action on sustainability issues**
- 3 Need for increased use of waste for energy, better use of resources, cycle approach**
- 4 Right pricing of resources and environmental services**
- 5 Information and infrastructure for sustainable living**
- 6 Call for action to demonstrate feasibility of the bioeconomy**
- 7 Need for a paradigm shift and integrated approaches to governance**
- 8 Importance of communication, and working with behavioural and social sciences**

WWF youth volunteers message was that it is time to take actions. They also emphasized that the solutions for solving climate crises does not come for free. They pointed out that if you learn to think about sustainability and the climate crises at an early age, that would make a difference.



The former Koli Forum 2011

Damage to the environment increasingly extends beyond national borders; climate, water, and many other natural resources are trans-boundary and global by nature. To manage those, global approach is needed, joint global agreements and regulations - a comprehensive strategy of using natural resources is needed. The Koli Forum of 2011 raised important issues of creating global criteria, international commitments on key targets, globally committed emission schemes, but also need of innovations:

THESES 2011

1. Bioeconomy needs to be raised as the driver for sustainable European competitiveness

- a. Wood as a building material
- b. Comprehensive communication of bioeconomy
- c. Forest sector should be used as benchmark of bioeconomy
- d. Global criteria and commitments

2. Education is a key factor in raising awareness of bioeconomy opportunities which – combined with an understanding of customer needs – boosts innovations

- a. Public-private partnerships
- b. Fostering entrepreneurship in higher education
- c. Incubation and venture funding
- d. Demonstrations

Messages of support

The Koli Forum is challenging us to act locally but think globally, and furthermore, to learn, compromise and rethink. During the coming decades we will face great challenges and growing uncertainty globally and locally. We need to change our way of thinking and question the knowledge we have used to ground our decisions. Visionary thinking, holistic approach and far-sighted leadership were seen to be essential in all sectors.



"We should always remember that the world must be passed on to future generations in as good a shape as we got it."

H.E. Jayanthi Natarajan, Minister for Environment and Forestry, Government of India



"Window for the bioeconomy is now open. There is world-wide demand for the solutions that can meet mankind's great challenges, such as climate change and resource scarcity. These major challenges create demand – and perhaps even greater need and vision – that can be met by the bio driven economy." "This is the third revolution we are talking about"

Mr Ville Niinistö, Minister for Environment, Government of Finland

"The financial and economic crises have made it clearer than ever that we must act today, to put in place the necessary frameworks and safeguards to ensure we can develop sustainably, now and into the future. First, we must do more towards getting the prices right. Second, while pricing instruments are key to moving us towards sustainable production and consumptions patterns, we must also complement these instruments with other approaches for more coherent and effective policy instrument mixes. And finally, we need to ensure more proactive, rather than reactive, approaches to better manage future risks",

Rintaro Tamaki, Deputy Secretary General, OECD



"Climate change is going to lead to increasing water scarcity in several parts of the globe, unfortunately this will happen on a large scale in those areas where we already have a significant amount of scarcity of water. And therefore,



the extent of water-stress is going to grow in the future, which could lead to conflict or a potential of conflict. This is something on which we need to keep on watch. All this clearly implies that our management of water resources will have to change substantially”, **Dr. Rajendra K. Pachauri**, Chairman of Intergovernmental Panel on Climate Change (IPCC)



Dr Pekka Hallberg, Chair of Koli Forum Advisory Board, President Emeritus of Finnish Supreme Administrative Court

We are in search of policies with a direct impact on the economy and environment. The scientific and economic perspectives are critical. In addition, juridical perspective is necessary in order to fulfil the objectives. Recently environmental law is one of the most international branches of law. Characteristic is the fact that the norms break traditional boundaries of judicial method. Damages to the environment increasingly extend beyond national borders, which is why a need for international agreements has increased. It is necessary to examine general principles from a global perspective. Globally, regulations in the field of environmental law are still quite uncommon.

The importance of well-functioning public administration and good cooperation between political and business leaders are necessary. Transparent administrative processes, forwards looking policy-making and strict but solution oriented government control are prerequisites for sustainable use of natural resources and responsible resource-based industries. Far-sighted leadership in all sectors is the order of the day!

Dr Liisa Tahvanainen, Secretary General of Koli Forum, Adj. Professor

It is been presumed that we are entering more uncertain and volatile age of time, due to many reasons, such as changing climate, increasing population and consumption, financial crises etc. Forecasting and long-term planning today are not sufficient. We still aren't estimating renewable resources very accurately, to know where and how much resources we have – and how fast the resources are renewing. Accurate and open information is crucial for



planning. However, it has been seen that for example, climate change and the effects it is causing we even don't have knowledge yet to very well predict. According to the new IPCC reports, warming is faster than earlier expected, glaciers are melting faster than expected etc. Planning ahead to mitigate the risks such as droughts experienced in USA, floods in Mozambique, forest fires in Russia etc. is getting more and more important to avoid huge social and economic costs or even armed conflicts.

Koli Forum 2013 concentrated on implementation, local responsibilities to reach global targets, empowering consumers, farsighted leadership and holistic governance – and, the crises and conflicts that might be caused if not taking actions in time and if not planning ahead. Koli Forum pointed out that bioeconomy provides a way to sustainable economic growth possibilities and a way to poverty eradication for developing countries.

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The next Koli Forum will take place in 2015

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3rd KOLI FORUM: Forests and Water – the key resources for a sustainable and competitive bioeconomy

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