



Adapting to a changing climate: the main fields of economy and society

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Climate change adaptation on the level of whole society...

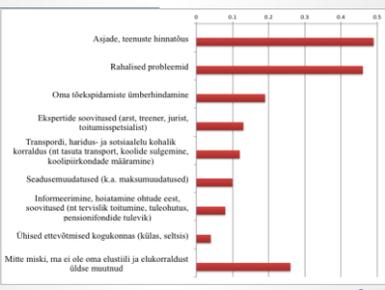
- ...is a vast task, which may be ranked to so-called enchanted problem (i.e., tasks that must be solved under insufficient and controversial information under changing environment and there is a high probability that any solution in one side of the system brings along another kind of problem at the other side of the system)
- it seems to have a certain analogy with the tackling of sustainable development questions, which by Stephen Sterling (2004) has been classified into four stages (in terms of education):
 - denial* – the problem is passing-by hype;
 - bolt-on* – cosmetic reforms, adding some actions here and there;
 - built-in* – serious greening, integrating more or less into every action;
 - whole-system redesign*, very strong transition, wholly integrating, from the very bottom-line.

Sterling, S. 2004. Higher education, sustainability, and the role of systemic learning. In: Higher Education and the Challenge of Sustainability. Problematics, Promise and Practice. Kluwer Academic Press.



People have been made some arrangements in their lives during the past three-four years under the circumstances of:

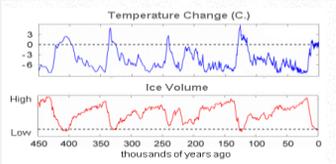
Mina. Maailm. Meedia 2014 (TÜ ÜTI)



Category	Frequency (approx.)
Aegade, teenuste hinnatub	0.45
Rahalised probleemid	0.42
Oma töökspidamise ümberhindamine	0.25
Ekspertide soovitatud (arst, treener, jurist, töötamisetsiaalid)	0.15
Transporti, haridus- ja sotsiaalelu kohalik korrastus (nt tasuta transport, koolide sügavem, kooliparkoonde määramine)	0.12
Seadusemuudatused (k.a. maksuandatused)	0.10
Informeerimine, hoiatamine ohtude eest, soovitusel (nt tervisealok tootmine, tuleohutus, pensionifondide täitvts)	0.08
Ühisel ettevõtmised kogukonnas (kõlas, seltsis)	0.05
Mitte miski, ma ei ole oma elustili ja elukoortad üldse muutnud	0.20



There is nothing unprecedented in climate change:



Homo sapiens
Homo heidelbergensis
Homo neanderthalensis

1) P. Gibbard and T. Van Kolffshoten (2004) The Pleistocene and Holocene Epochs", in F. M. Gradstein et al., A Geologic Time Scale (2004), Cambridge University Press
 2) Meade, N., 2002. Above ground: science @environmental.org. Newark.



Impact of climate change to society:

- If the climate change stays within the current weather variability, there is actually nothing unwitnessed or unaffordable waiting for us.
- The most challenging seems to be tackling with the unexpected extreme weather changes – storms, trombs, heavy rains.
- The biggest attention needs a range of less secured people – elderly, children, poor, homeless.
- The most important part for coping is that the leaders of the community know, how to act in terms of unsafe situation and that anyone would be left without the help.





Specific impacts on certain fields of society:

- All the people within the society are exposed to the extreme weather changes, but less capable of coping the situation, are those, who are less secured; therefore, the leaders of the community, social workers, and other involved people must be prepared to that kind of situations, trying to prevent the possible threats.
- There has been no overflow of climate refugees so far, but currently – there is a strong need to deal with „ordinary“ refugees already anyhow.
- Awareness** – all sorts of communication campaigns actually does not work, as people learn from their own real experiences. We have simple possibilities to make the information available to specialists, but the existence of information does not brake the skepticism. Mostly we must to rely on good education.
- Education** – the climate change does not change the education. What is needed to do is to check over the infrastructure, mainly school-buildings. Formally, there are already all possible opportunities within the existing school-system to teach and reflect the problems concerning the climate change.
- Science** – climate change does not change the science. The only change may occur in the priority of the fields of research. Science depends heavily on the financing system and the future generation of scientists. If the topic of climate change on the scientific level is important, it should be supported.
- International relations** – currently, the impact of Estonia on the level of international climate debate is marginal. Estonia with it's big CO₂ footprint does not allow us to be serious proposals-maker. The bigger **emphasis may be on developmental cooperation**, also on the level of mitigation.



Impact of climate change to economy:

- The whole economy, as also society, adapts with the climate change quite fast, which is rather quicker than the predicted climate change itself.
- Extreme events so far have indicated that the business sector is capable to turnaround its actions rather quickly. For example – the changes in timber transportation system after some big shocks.
- Attention must be paid on businesses that settle in regions, where is a great risk to suffer under heavy climate changes (i.e., potential flooding areas, etc.).
- Much more important for the businesses are political disruptions into the market relations and production (e.g., tax changes or protectionist actions).

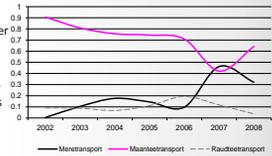


Figure 2. Volume of timber transportation and its fast change in different sectors (Lukason et al. 2011: 95)



Specific impacts on the certain fields of economy:

- **Insurance** – globally, there may appear some new insurance products to the response of the climate change, but Estonian insurance market is too small and the people too poor for that kind of innovative products to motivate both suppliers and potential clients. It is important to mention that the main bigger insurable risks are internationally reinsured by the local insurance companies. There is a possibility for the rise in the prices of insurance premiums, but no new innovative products.
- **Banking** – mainly foreign banks are dominating in Estonian market. There is no governmental bonds issued and the stock exchange is rather small in its volume. Therefore, there is no direct climate change impact or they retreat on the level of ordinary business risk. More important are indirect impacts, especially through the foreign stock exchange markets.
- **Entrepreneurship** – the most critical impact is on the potential disruptions in the supply chain of energy (electricity) and raw materials, which may occur on the results of heavy storms. There is a potential increase in insurable losses and the increase of production costs because of the adaptation of production. Because of the flooding, some businesses may need to remove to other places.
- **Labor market** – there may have a seasonal increase of the need for labor force (e.g., in medicine, agriculture); climate change may bring along some additional increase in training costs.



Both society and economy depend more on other important factors than climate change (i.e., the impact of climate change on society and economy is rather small).

LUCKILY – both society and economy are strongly adaptable and the predicted climate change in Estonia remains in the range of current climate changeability. Therefore – there is no doubt that society will adapt with the new climate very quickly and easily.

RISK – Europe and the rest of the world is moving on with more radical changes and there are implemented more influential mitigation measures, after which the adaptation measures remain unavailing.



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Thank you for the attention!

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