

Group 1 National Hub Template (HBM data for Awareness)

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Introduction:	
<ul style="list-style-type: none">• Background information on the evolution and status of HBM in your country.	<p>HBM has been part of research activities in Estonia since 1970's. Particularly we have been interested in the impact of oil shale industry and its effects on Ida-Viru County population and general human health. The field was actively studied in the scope of multiple programmes until early 1990s due to political-historical reasons.</p> <p>Estonia stopped participating in specific projects until 2011, when the preparations started for the 2014 launched "Health impact in oil shale sector". The results of the study indicate that the health status of residents of Ida-Viru County is worse in many respects than elsewhere in Estonia, with environmental pollution originating from the oil shale sector being one of the reasons.</p> <p>New phase in biomonitoring studies launched 4 new projects to correlate relations between oil shale sector activity and different indicators. These indicators studied were as follows: creating method to find correlation between asthma/allergic conditions and oil-shale sector areas (2019), pre-study to detect bio-markers for health evaluation (2020), chemical composition of groundwater based public water supply (2020) and children birth data (2021).</p> <p>There are multiple concerns related to the oil shale mining and its effects. Conducted studies show clearly that multiple health parameters are statistically remarkably different ($P < 0,05$) from control group populations outside the affected area.</p> <p>Studies have found that the proportion of babies, which are born preterm, is highest in Ida-Viru County among all the Estonian counties. There the prevalence reached an average of 5.9% in the period between 2004 and 2018. In the same period, an average total of 4.9% of all births in Estonia were preterm. Health inequality levels also reflected in the form of lower birth weights, being 125g lower in Ida-Viru County in comparison to the average figures for the other Estonian regions. The same region also exhibited a statistically significant percentage of babies which had a low birth weight, defined as birth weight less than 2500g.</p>

	<p>Life expectancy in Ida-Viru County is lower than in other parts of Estonia. In 2011 it was 3,7 years shorter for men and 2,2 years shorter for women.</p>
<p>Main text - Results and Discussion</p>	
<ul style="list-style-type: none"> • Description of issue(s) which have resulted in the raising of awareness. • Include brief description of sample population, substances of concern and whether local/regional/national. 	<p>Previous, almost 35 years ago conducted biomonitoring study showed us the increased amount of Hg was present in fishermen from western Estonia and not from oil-shale sector workers from Ida-Viru County. This information gave us a warning that only biomonitoring oil-shale sector workers and presenting related data, creates a possibility to come to false conclusions. Larger scale comparison and relevant data is needed.</p> <p>Another topic is Pb in ammunition which is still relevant today. Since the hunters use this kind of ammunition, we have a possibility for neurotoxic heavy metal ending up on dining table dish.</p> <p>Likewise other biomonitoring programs in Europe have suggested, we are well-aware of the problem related to pesticides and their residues in environment. Further studies regarding the matter are definitely needed in Estonia.</p> <p>Based on the first step of the biomonitoring study and analysis of pollutants, emission and monitoring, the pollutants characterizing the environmental pollution of the oil shale sector would be PM10, and PM2.5 (as well as heavy metals bound to particles), benzene and PAHs such as B(a)P. Considering the results mentioned, we are preparing for the next step to carry out the biomonitoring study.</p>
<ul style="list-style-type: none"> • Description of HBM programme if it exists e.g. implementation of a HBM module into HES 	<p>Results of the oil shale study (2014-2015) have been taken account on the preparation of the Estonian oil shale strategy covering years 2016 to 2030. The annual rate of oil shale mining continues to be 20 m tons, which is calculated as a multi-annual average. The results of the impact indicators set in the development plan are analysed every five years. Additionally, in Ida-Viru County we monitor pollutants that other monitoring stations do not, like ammonia, formaldehydes and phenols. Random measurements for chemicals in affected areas are implemented as well.</p> <p>We do have population health strategy for the years 2020 – 2030. It declares the program for maintaining human health and extending the lifespan of population.</p>

<ul style="list-style-type: none"> • Describe which ministries (Environment, Health etc.)/policy makers and stakeholders involved/steering/financing the HBM programme. • Give examples - specific chemicals or outcomes. 	<p>In Estonia the health related matters are discussed and decided through Ministry of Social Affairs (ministry of health). Most of the mentioned studies are financed through Environmental Investment Centre which is administered by Ministry of Environment.</p>
<ul style="list-style-type: none"> • Steps/processes needed or used to get the attention of policy makers. 	<p>Estonia is relatively small and large scale work flows are all interconnected. Thus the cooperation between government and institutions is rather natural for our instance.</p> <p>From the oil shale sector studies, we are now aware of the health-problematic area of Ida-Viru County. The studies have risen awareness in locals as well as policy makers. While no one doubts the necessity and importance of the oil shale sector, we need to pay more attention to the state of the environment and the health of the region. Long-term improvement of the health of people living in area depends on cooperation between decision-makers, scientists, local governments, businesses, health systems and residents.</p> <p>In order to reduce pollutant emissions, the oil shale companies should use the best available technology to achieve their goals, as the risk of preterm births and low birth weights has been shown to be higher within the vicinity of an operational oil shale industry site. Furthermore, levels of awareness in local people, especially in gynaecologists and midwives, needs to be raised, within the region, which is suffering most from air pollution effects on birth indicators.</p>
<ul style="list-style-type: none"> • Describe barriers e.g. funding; challenges e.g. participant recruitment; opportunities e.g. enhancing cross government working and linking of env data with exposure measurements currently at play in your country with regards to HBM. • Have any of these barriers been addressed by HBM4EU? If yes - describe. 	<p>Main barrier for funding is our number of population. Being a relatively small country, national budgets are relatively small as well. Without an external source of income, it is quite difficult to extend the set budget.</p>
<ul style="list-style-type: none"> • Other players who would be beneficial in raising 	<p>Private institutions.</p>

awareness and working together to promote HBM	
<p><u>Future plans -</u></p> <ul style="list-style-type: none"> • Are there plans to use HBM data in the future for policy or awareness - give clear examples. Will the data from HBM4EU be used? 	<p>After conducting the next step study in biomonitoring the markers in affected population, we do plan to adjust our legislation, correcting regulations and standards according to the results. We also do plan to adjust the arrangement of first level medicine in Ida-County, as needed. A need for specific trainings for staff or budget for certain procedures may be required as well.</p>