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RESULTS OF THE STUDY VISIT TOUR AUSTRIA

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TOPICS

1. A mechanism to enforce industries regarding data collection and the results of the emissions parameters
2. See the Austrian experience for data collection in the industries
3. Classification of industrial waste water
4. We need to know the major pollutants in each industrial activities
5. Best wastewater treatment methods in each industrial activity
6. We have difficulties in monitoring pollutants related to Some industrial sector such as Pesticides and Veterinary industry (No laboratory exist for this purpose) and check if there is a possibility to use estimation factors (or advise how to solve the problem)
7. We need an applicable methodology to determine the industries that are connected on partial waste water treatment plant (ex. If we can use GIS)
8. Improvement of the Environment Statistics questionnaire related to industrial activities to have more data and questions related to monitoring, not only quantities of water and waste water but also quality
9. Mechanism of calculation of this indicator on the national and subnational level (practical)
10. The problem in our case also in the parameters that is monitored and in the frequency and sustainability of the monitoring

INVESTIGATION: INVENTORY OF INDUSTRIAL ACTIVITIES WITH SIGNIFICANT IMPACT ON THE ENVIRONMENT

- **Objective**: Inventory of industrial activities (largest, significant installations, e.g. thresholds according to PRTR classification or Annex I, IED), approximately 80 facilities, established
- **Purpose**: get a clearer picture of (industrial) waste water situation in Jordan, in order to set efficient & effective measures for improvement of water situation in Jordan
- **Methodology** of assessing environmental impact of industrial activities
  - define criteria, e.g. water volume (usage, discharge), concentration of relevant pollutants (key environmental issues (KEI) according to (reported) PRTR pollutants,
  - clarification of indicators, standards (ELV) for pollutants…
  - link inventory of industrial activities to environmental impact, e.g. according to Risk Criteria Database (IRAM, “Easy Tools”) used for Environmental Risk Assessment in Environmental Inspection (Art.23 IED)
  - for methodology see also KEI project: https://circabc.europa.eu/w/browse/b8ddea71-03b9-4674-bfc2-7ef2626c3916
- **Clarification**: impact on the environment (integrated approach, air, water & soil) or only pressure on water resources?
- **Stakeholders/Institutions** involved: MoEnv, DOS, MWI, MoI&T & Chamber of Industry, ASEZA (commitment necessary!)…
- **Sources of Data**: existing studies, permits, statistics, PRTR data of other countries (identification of relevant pollutants per sector & possible estimation of emission factors);
  data gaps filled with data survey, questionnaire (enforcement mechanism by by-Law with time line → see topic 1)
- **possible starting point**: e.g. Regional Study Case (e.g. al-Zarqa, 65% of Jordan industrial sites), or focus on specific industrial activity/sector over the whole country

TOPIC 1 - ENFORCEMENT MECHANISM FOR MEASURING, DATA COLLECTION & REPORTING

A mechanism to enforce industries regarding data collection and the results of the emissions parameters

Recommendations

- Identification of roles and responsibilities of different stakeholders → Agreement of Cooperation, Competences and Responsibilities (MoEnv, WAJ, MWI, JVA…)
- Legally binding reporting obligations (By-Law / legal binding Instruction) for registration, monitoring and reporting of environmental data (water pollutants, sector specific) with defined sanctions, or link reporting obligations as prerequisite to incentives for covering investment costs.
  These data to be used for calculation of specific emission factors for industrial sites in Jordan. The emission factors can be used for future estimations on yearly pollutant loads (Monitoring Project for defined industrial activities/water pollutants).
- Priority List of industrial activities (e.g. most polluting ones, which have greatest impact on environment / pressure on water resources)
- Priority List of Water Pollutants (most relevant ones, specify monitoring frequency, e.g. every 6 years)

TOPIC 2 - AUSTRIAN EXPERIENCE FOR DATA COLLECTION IN THE INDUSTRIES

See the Austrian experience for data collection in the industries

- see presentations of the Workshop in the frame of the Study Visit Tour Austria
  - 01_IntroWWLegislationAustria_180716_KLfinal.pdf
  - 02_IndustrialWWLegislation&Implementation_hef180716.pdf
  - 07_EMREG-OW.pdf

TOPIC 3 - CLASSIFICATION OF INDUSTRIAL WASTE WATER

- see presentations of the Workshop in the frame of the Study Visit Tour Austria
  - 03_Classification&MajorWaterPollutants_180717.pdf

TOPIC 4 - MAJOR POLLUTANTS IN EACH INDUSTRIAL ACTIVITIES

We need to know the major pollutants in each industrial activities

- see presentations of the Workshop in the frame of the Study Visit Tour Austria
  - 03_Classification&MajorWaterPollutants_180717.pdf

TOPIC 5 - BEST WASTEWATER TREATMENT METHODS IN EACH INDUSTRIAL ACTIVITY

- see presentations of the Workshop in the frame of the Study Visit Tour Austria
  - 04_BATforWWTreatment_180717.pdf

TOPIC 6 - MONITORING OF CERTAIN POLLUTANTS & ESTIMATION FACTORS

We have difficulties in monitoring pollutants related to Some industrial sector such as Pesticides and Veterinary/Pharmaceutical industry (No laboratory exist for this purpose) and check if there is a possibility to use estimation factors (or advise how to solve the problem)

Laboratory Tour & Presentation 3719048_Weiss.pdf

Reference for emission levels of different pollutants in Organic Fine Chemicals Production: e.g. http://eippcb.jrc.ec.europa.eu/reference/ofc.html

Recommendation

- Assigning orders to external (accredited) laboratories, for (minimum) one reference measurement - the reference measurement/analysis can then be used for calculation with estimation/emission factors
- Cooperation with Universities & Research Centers, development of estimation factors in the frame of projects
- Jordan project on measuring pharmaceuticals/pesticides in waste water

TOPIC 7 - INDUSTRIES CONNECTED TO PARTIAL WASTEWATER TREATMENT PLANTS

We need an applicable methodology to determine the industries that are connected on partial waste water treatment plant (ex. if we can use GIS)

- Topic of MWI
  - Inventory of (illegally) connected discharger to sewage system
  - Identify and improve accuracy of percentage/share of industrial waste water discharged into sewage system, to irrigation etc.
  - Identify percentage/share of illegal (industrial) waste water discharges that cannot be used for irrigation purposes

Recommendation

→ Incorporation of this investigation as part of the inventory to be established

→ Part of statistical data survey/questionnaire

TOPIC 8 - IMPROVEMENT OF ENVIRONMENTAL STATISTICS QUESTIONNAIRE

Improvement of the Environment Statistics questionnaire related to industrial activities to have more data and questions related to monitoring, not only quantities of water and waste water but also quality

- Prerequisite is the availability of qualitative and quantitative data on pollutants in different industrial activities (link to Topic 1 & inventory of industrial activities)
- Incorporate PRTR/IED activities classification additionally in statistical questionnaire, which already includes ISIC classification (see also http://prtr.ec.europa.eu/#/home)
- Check correlation between NACE2 classification and ISIC4 classification

TOPIC 9 - MECHANISM OF INDICATOR CALCULATION FOR ENV. STAT. QUESTIONNAIRE

Mechanism of calculation of this indicator on the national and subnational level (practical)

- Methodology of using SEIS indicators is clear

TOPIC 10 - MONITORING OF PARAMETERS & POLLUTANTS (MEASURING, CALCULATION, ESTIMATION)

The problem in our case also in the parameters that is monitored and in the frequency and sustainability of the monitoring

- This topic is related to Topic 1 and the establishment or an inventory on industrial sites and industrial waste water dischargers in Jordan
- Refer also to the ‘Monitoring’ sections of sector specific BAT Conclusion Documents and BREFs
- See also ePRTR Guidance document (E-PRTR Guidance Document)

FURTHER TOPICS & TO DOS

- Provide for a standard for waste water reuse (EU?, examples other countries)
  - http://ec.europa.eu/environment/water/reuse.htm
  - http://publications.jrc.ec.europa.eu/repository/bitstream/JRC92582/lb-na-26947-en-n.pdf
- Example for (integrated) permit, content of permit, issues of application
- Example of Austrian Specific Waste Water Emission Ordinance (WWEO), e.g. Yeast Production (translated in English)

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