

**Minutes of meeting of experts to evaluate the concept papers
for disbursement of funds under REReP 1.8 project**

March 5, 2002

Present: Expert Ferenc Andras , REC; Dezso Mikus, Environmental Management Institute; Andrzej Kraszewski, Warsaw Technical University (via the telephone); Kristina Soone, REC; and Grazyna Krzywkowska, REC.

Prof. Andrzej Kraszewski opened the meeting, via telephone, with his remarks on the concept paper. Generally, he described them as a good starting point. He proposed that most of the countries in the region should raise funds for projects aimed at creating integrated national environmental information systems (NEISes). The possible outcomes of such projects, which run on a country-by country basis, could be the following:

- The classification of available environmental information according to the place to which it relates, how it is processed and where it stored.
- Reviews, where necessary, of state environmental monitoring systems and the conceptualising of measures to improve existing monitoring programmes, procedures, data processing and storage.
- Classifying stakeholders of the environmental information by specifying their needs and expectations.
- Conceptualisation of state repositories of environmental data (SREDS), systems of related databases designed to be the national archives.
- Devising a structure for wide area teleinformatic networks (WANs), which would connect ministries of environment, environmental agencies, regional environmental administrations, institutions responsible for state environmental monitoring, and NGOs.
- Conceptualisation of information processing programmes and procedures, with a stress on finding modern and cost-effective tools, such as data warehousing, GIS, mathematical modeling, forecasting, etc.
- Conceptualisation of national environmental meta-bases (RDS) for specific interest groups from public administrators to industrial players to academics.
- A design of national environmental portals with reporting systems.
- Reports of about 80 pages containing price estimates for system elements, a schedule and timeframe. (Having such reports for each of the countries and allotting international funding for the system elements would be much more effective and secure.)

It is understood that such tasks wouldn't be possible to accomplish during REReP 1.8 project.

In Kraszewski's opinion most of the countries presented concepts that could be more in-line with the project objectives, i.e. development of national environmental information systems. Most of the countries want to use the funding to build or reinforce networking facilities connecting them to the Internet. Although it must be admitted that good connectivity is an important issue, money available from the project might also be used for the following four elements of the system:

- national web portals designed to present environmental information with reporting systems that produce printed information;
- re-designed and/or reinforced national monitoring systems aimed at collecting environmental information.
- national databases collecting primary information from the monitoring of the state of the environment;
- national environmental meta-bases.

These tools would be much closer to end-users: environmental authorities, NGOs and the general public.

Prices of equipment and services in many cases are overestimated, though in some cases they are underestimated. Probably more care could have been taken in checking the market.

Remarks regarding concept paper from Albania

Albania intends to create a rudimentary database, begin collecting data and make this data available to the public and interested administrators. In Kraszewski's opinion the item and actions in the paper could be a bit more specific. Kraszewski suggested changing budget in the following way:

1. Establishing a data-acquisition procedure at the state repository of environmental data
 - a. Cataloguing existing data sources on air or water quality EUR 2,000
 - b. Advice on the monitoring programme of air or water quality EUR 1,000
 - c. Establishing rules to deliver already acquired data to the SRED
 - d. Establishing rules to deliver archival data to the SRED
 2. Establishing a state repository of environmental data: an electronic database on a PC server connected to MoE's LAN
 - a. Acquisition of PC 2x1GHz, 2 Gb RAM, RAID 4x36 GB HDD / Linux EUR 4,000
 - b. Designing a simple database of air or water quality EUR 2,000
 - c. Developing the database (MySQL or Postgress) EUR 6,000
 - d. Data processing application: simple statistics and presentation EUR 2,000
 3. Development of simple web pages for presentation of the data
 - a. Designing and programming the web pages EUR 3,500
 - b. Establishing rules for updating of web pages
 4. Training and expertise
 - a. System administrator manual EUR 1,500
 - b. User instruction manual EUR 1,000
 - c. Training of system administrators EUR 1,500
 - d. Training course for MoE officers and NGOs EUR 2,000
- Total: 26,500 EUR**

This is merely the concept, a slightly reorganised version of the table on page 5. The prices outlined are based upon the maximum engagement of local experts and programmers.

Remarks regarding concept paper from Bosnia and Herzegovina

The concept paper is very general and it was not prepared with the degree of precision required for expert evaluation. It needs rewriting. The prices probably have not been estimated on the basis of the careful market queries. This is evident from the listed prices of Oracle, Arc View and SPSS software: The true prices would be at least there to four times higher. In Kraszewski's opinion the concept paper must be far more specific.

Remarks regarding the concept paper from Bulgaria

In general, Bulgaria wishes that most of the funding go toward building the Internet connections between the cells of the environmental management system: the ministry, the agency, 10 MOEWs and the network of NGOs that play an important role in the data collection system. This idea is to be supported with the following remarks:

1. Connections between the Ministry of Environment and Waters and the 10 regional inspectorates of environment and waters (RIEWs) must be realised by means of wide area network (WAN) rather than a local area network (LAN). Kraszewski suggests building a WAN with virtual private networks (VPNs). The central idea of VPNs is to create private “tunnels” while connecting nodes of the networks. This assures much better privacy and somewhat better connectivity. The price would be almost the same as in case of traditional WANs. The VPN gateway would be realised by one switch situated in the Ministry of Environment and Waters, eg. a 3COM Superstack (12 ports), which can be purchased for about EUR 4,000. Clients could be reached using traditional switches. The proposed three switches might be not enough to connect WAN if no additional funding is available.
2. Kraszewski would suggest adding routers with firewalls, IPSec, L2TP and QoS (as e.g. CISCO 2600) available for about EUR 2,700 each. Such routers will ensure in addition to normal network traffic routing decent protection of local servers. Money will be saved on purchasing MOEW firewall software.
3. The price indicated: EUR 2,000 for a computer serving as link (to RIEW Ruse) is overestimated.
4. Probably the existing databases in regional branches will not be able to co-operate via network with a central database. Actually some export-import techniques could be used to exchange information. The proposed network would be fully used if the database system is redesigned using, for example, client-server architecture or the concept of a distributed database system.

Remarks regarding concept paper from Croatia

The proposed project concentrates on designing and implementation of the relational database covering one thematic area: coastal bathing areas water quality. In addition, it has been designed the implementation of the meta-base collecting information on the environmental data sources indicated in point A.1. To the concept paper the table with indicative prices of hardware/software/service solutions is attached.

Following are his remarks on individual concept paper:

1. It is strongly recommended, that the data processing and presentation be separated from the data archiving.
2. It could be advised to the Croatian Ministry of Environment that the activities listed in p. I.1.1 *Data Sources and Formats* would be written up in a draft document (report) called ‘State Monitoring of Environment: Revised Programmes for Selected Components of Environment.’
3. As an element of the pilot project a related database should be designed and implemented to store information about the quality of coastal waters. The metabase would eventually be a separate, second-tier database. It would hold broader information related to coastal waters including information on the quality of these waters related environmental information. The metabase is usually not a place where data itself is stored, but the place containing information on the location of this data. The core of the metabase is not the data itself but rather powerful and intelligent searching mechanisms.
4. One of the commercially available metabases would be adequate, such as the UDK (<http://www.umweltdatenkatalog.de>). Development of a new metabase would be tedious and too costly for the funding available in the project.
5. Croatia can also consider using the Internet as an element of presentation system. A good web site could be designed as part of the project. The concept paper doesn’t clearly explain how the results would be presented.
6. The budget estimates are too rough. Price estimates are necessary, therefore a detailed specification of project items is required along with thorough queries.

Remarks regarding concept paper from FYR Macedonia

The concept paper was not precise enough to be evaluated by an expert. The author of the concept paper writes about the PHARE COP97 project which identified needs for equipment, software and organisation, and indicates that REC funding would be used for some auxiliary purchases to this project.

This concept paper was clearly not in line with REReP 1.8 goals and cannot not be accepted in this form. Instead, a separate, detailed project should be presented to REC, one dedicated to national portal enhancement and archiving sources of environmental data in a metabase.

Remarks regarding concept paper from Romania

Once again the concept paper proposes a radical enhancement of connectivity in the Ministry of the Environment. The structure of purchases (although very general) suggests a decent level of professionalism. The connectivity upgrade probably has been backed by sufficiently detailed design work. Pricing seems based on thorough queries. In addition, EUR 8,060 would be used for launching an awareness campaign with clearly outlined goals.

Remarks regarding concept paper from Yugoslavia

Proposed action covers three tasks. The first one is meant to provide monitoring equipment. First, it is not clear what "VOx measurement unit" means. Does it mean NOx (Nitrate oxides) or VOC (Volatile organic components)? In the first meaning was intended, an NOx measuring unit would cost about EUR 15,000 and the similar sums must be spent for other, constituent measuring units. A suitably customised automated air-quality measuring station can easily cost EUR 100,000. It must be stressed here that such stations are expensive to operate.

As for Task 2: EUR 10,000 for a web portal air quality section needs justification. In Poland the entire national portal (air, surface- and groundwater, soil, noise, radiation, industrial accidents, waste, emissions to the water and air, monitoring of natural environment, etc.) was estimated to cost EUR 27,000.

Remarks regarding concept paper from Kosovo (Territory Currently Under UN Interim Administration)

The proposed project concentrates solely on monitoring equipment for a mobile laboratory that tests the quality of air and water. Though precious little monitoring activity occurs in Kosovo, such a project might be a good starting point:

1. The question arises whether such a concept conforms with REReP 1.8 rules?
2. How would the results of monitoring be made available to the stakeholders, including public administration, NGOs and to the general public?

If REC decides to finance the project it is recommended that some funding be given to publication or dissemination of the monitoring results. Since the Internet in Kosovo is not commonly available a sort of printed bulletin would probably solve the problem.

Secondly, the experts present at the REC gave comments on the concept papers that mostly overlapped with Prof. Kraszewski's.

Generally, they asked for more technical specification regarding the equipment and they favored reassessing the proposed budgets in every concept paper. They asked the countries to send the schemes (drawings) of the proposed systems. They also asked for more information on needed software licenses (their number, scope and type, which all influence their price). REC expressed the need for more information on making the data more accessible to the public since it is ultimately part of the REReP 1.8 project. For example, the scope of the Kosovo concept paper would be in line with the goals of the REReP 1.8 only if the part about information accessibility is expanded and described in more detail.

The specific comments of the experts Ferenc Andras and Dezso Mikus were as follows.

Concept paper from Albania:

- Technical specifications are needed for the software and hardware (possibly specify a brand-name server).
- Clarification is needed on the scope of training by local trainers.

Concept paper from Bosnia and Herzegovina

- Distance between ministry and monitoring resource centres has to be stated
- What is "parallel connection"?
- Is "a firewall" security equipment?
- Choice of software has to be justified, more funds for software are needed (EUR 10,000).

Concept paper from Bulgaria

- more technical specifications on the software and hardware is needed

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Concept paper from Croatia

- How can we make sure that the metabase will include links to accessible databases - and how accessible are these databases ?
- more information on public awareness and information of general public, NGOs, industry about the accessibility of information and on the content of the instructions, how they are going to reach them? -what do they mean by "links" in the budget?

Concept paper from FYR Macedonia

- why printer and plotter are of the same size? what is exactly their purpose?
- what is the budget and activities of software development and training
- what are planned access to information activities?

Concept paper from Romania

More information is needed about the strategy on awareness raising and publishing and their relevance to the goals of REReP 1.8.

Concept paper from FR Yugoslavia

- technical specifications of air monitoring unit are needed
- more information on www portal is needed, including web design cost
- more information about bulletin and other access to information activities is needed

Concept paper from Kosovo – territory currently under UN interim Administration

- more information about data integration is needed
- more information on activities on access to information is needed, including possibility of financing them through other projects
- consumables cost may be under-budgeted
- more explanation on the purpose, price and range of GPS to be purchased is needed.