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environmental services

***ENVIRONMENTAL ASSESSMENT FOR  
AGRICULTURAL ACQUIS COHESION  
PROJECT***

Zagreb, July 2005.

member of HEP group



Ordering party: *Ministry of Agriculture, Forestry and Water Management*

Contract: **10-05-2673 / 25**

PROJECT TITLE: ***ENVIRONMENTAL ASSESSMENT FOR AGRICULTURAL ACQUIS COHESION PROJECT***

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Working Order: **004/05-25**

Document Type: *Study*

Doc. No. 25-05-3118/25

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<b>Controlled copy</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>Revision 1</b>
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Zagreb, 04 July 2005

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## 1 INTRODUCTION

The Agricultural Acquis Cohesion Project aims to assist the government of Croatia in its EU accession efforts, in the areas of agriculture and rural development. The overarching objective is to enable Croatia's agricultural sector to capture benefits accruing from accession to the EU. More specifically, the immediate objective of the project is to develop sustainable systems and capacities within the Ministry of Agriculture, Forestry and Water Management (MAFWM) to ensure timely compliance with EU acquis conditions in the rural sector. Towards this, the project will work with the government of Croatia to:

- (i) support the establishment of a Special Accession Program for Agriculture and Rural Development (SAPARD) Agency, implementing SAPARD rural development measures and a limited and carefully targeted number of sub-measures;
- (ii) address gaps in the MAFWM management, administration, information technology, and institutional structure that are necessary for an enlarged MAFWM and conditional to EU accession;
- (iii) Support the establishment of the Croatian Food Agency (CFA) and create the necessary conditions for Croatian compliance with EU sanitary and phytosanitary requirements.

A Project Preparation Facility (PPF) would provide additional resources to realize activities envisaged under the above project components. The project would also facilitate the establishment of a PIU (Project Implementation Unit) for the management, monitoring and evaluation of project activities.

The Project will be implemented around five components:

- 1) Strengthen Capacity for Absorbing EU Financial Assistance in Agriculture**
- 2) Empowerment of MAFWM Administration and Management
- 3) Ensuring Safe Food and Sanitary and Phytosanitary Conditions**
- 4) Project Preparation Facility
- 5) Project Management

The Government of Croatia has requested World Bank assistance to fill specific gaps that will contribute to MAFWM's overall preparedness to fulfill the implementation requirements for EU accession. The Bank is well positioned to assist the Government in these efforts because of the experience gained through several operations in the agricultural sector in Croatia. It also possesses considerable experience available in building EU acquis compliance in both EU member and candidate countries.

## 2 PROJECT DESCRIPTION

As seen from the objective of the AACP many of the activities aim at building managerial, organizational and training capabilities, for which direct environmental measures are not easily established. However, for certain work activities defined under component **1) Strengthen Capacity for Absorbing EU Financial Assistance in Agriculture** and component **3) Ensuring Safe Food and Sanitary and Phytosanitary Conditions**, like activities related to construction of new laboratories, office buildings, different types of renovation and resettlement, the activities are easily predictable and therefore environmental measurement easily advised.

**In the component 1, Strengthen Capacity for Absorbing EU Financial Assistance in Agriculture** a comprehensive MAFWM Payment Agency (PA) is to be established, including an accredited SAPARD Payment Agency, with the necessary control, implementation, payment, accounting, internal audit, monitoring and information technology systems and capacities to rapidly and effectively implement the MAFWM Incentives System and SAPARD program. EC Directives require that the Payment Agency is established independently of MAFWM and that the PA facilities meet minimum requirements for physical and communications security. Initially, about 70 staff will be appointed to the Payment agency, including an incremental 54 staff, recently approved by the Ministry of Finance. By second project year up to 200 staff will be employed by the PA. The project has confirmed that no suitable or upgradeable office space is currently available in Zagreb for an office of this size and requirement and has consequently made provision for the construction of an independent PA office on land to be provided by the Government. Due to necessity to operate before the completion of new building, a suitable office space for rent should be found, pending the construction of a permanent facility.

**In the component 3, Ensuring Safe Food and Sanitary and Phytosanitary Conditions**, resettlement and/or construction of several objects is anticipated. The project supports for the establishment of the Croatian Food Agency, with particular reference to the medium term-development of supporting legislation and a consolidated, transparent, efficient, risk-based food inspection service. This would include the separation of human/animal health and food safety responsibilities amongst inspectors. Currently the office building of the Food Agency needs to be reconstructed, and therefore suitable supplemental working space should be found.

Additionally, the project aims to develop competent, regionally structured and interactive veterinary and phytosanitary inspection services supported by investment in staff capacity building, transportation, testing equipment, a web-based inspection reporting, certification and data management system and civil works and office equipment at up to 5 regional centers. Veterinary animal and public health services would be strengthened through:

- The development of the Veterinary Department as a Competent Authority;
- The establishment of a veterinary epidemiology department within the VD including the completion and integration of MAFWM epidemiology, residue testing, animal numbering, and border inspection software and staff training in its use;

- the establishment of national veterinary and plant health reference laboratories implementing ISO 17025 testing methodologies including investment in civil works, staff capacity, information management and some equipment;
- the development of an ISTA certified laboratory for genetically modified organism (GMO) testing would be established at the Croatian Institute for Seeds and Seedlings (CISS);

The laboratories on their current location and construction cannot meet criteria for ISO 17025 certification.

## 2.1 Objective

The objectives of this environmental assessment (EA) is to review environmental due diligence procedures in the agriculture sector, particularly with respect to capital investments, and to **prepare an Environmental Management Plan (EMP)** to describe the necessary environmental safeguards measures to mitigate expected environmental impacts. The assessment also reviews issues related to assessment of social safeguards such as land acquisition, resettlement and cultural heritage (e.g., assessing the presence of cultural values, cultural land issues or sites previously identified as cultural sites; and a process for "chance finds", or anything unearthed by chance in the digging/construction process).

## 2.2 Scope

The task report for the preparation of EA covers:

- (i) a review of proposed renovation and construction of new building that will be anticipated by the project which includes specialized laboratories;
- (ii) the legal framework, including the role and responsibilities of the MAFWE and other agencies; the environmental and construction permitting process of Croatia applicable to the proposed works; and
- (iii) Suggested mitigation measures, including possible changes to environmental and social impact assessment and mitigation procedures, preparation of guidelines and practical suggestions, and related training.

The assessment is based on and cross-reference a recent review prepared for the Social Services Sector Support Program which had similar construction issues, and a section which describes Croatian permits and monitoring anticipated in the construction along with any additional measures proposed.

The task report will cover environmental issues related to:

- temporary resettlement of offices (Croatia Food Agency and Payment Agency)
- land acquisition of social capital for new laboratory (Plant Protection Institute),
- construction of new laboratory and accompanying offices (Veterinary Institute, Plant Protection Institute, GMO testing laboratory)

- construction of office buildings (Payment Agency, and possibly 5 veterinary and phytosanitary regional centers)
- adaptation of existing object marked as cultural monument (Croatian Food Agency)

### **2.3 Baseline data – (source of data)**

Based on the Project Information Document (PID) for the project Agriculture Acquis Cohesion Project Environmental Assessment Safeguard Policy was triggered by this Project. Environmental assessment is defined thru The World Bank operational Manual 4.01: Operational policies: Environmental Assessment (2004) and The World Bank operational Manual 4.01: Bank procedures: Environmental Assessment (2004)

The assessment of future interventions has been done thru interviews with the representatives of MAFWM and World Bank, and representatives of Payment Agency, Croatian Food Agency, Veterinary Institute, Institute for Seeds and Seedlings and Plant Protection Department. ISO 17025 norm was examined at the Croatian State Department for Norms and Measurements.

### **2.4 Project organization**

The AAC Project would be managed by a Project Implementation Unit (PIU) established within the MAFWM Department for Policy, European Union and International Cooperation. The PIU would be responsible for day-to-day management of the planning and budgeting of project activities, procurement including preparation of procurement plans, preparation of progress and project management reports, staff management and project monitoring and evaluation, which will be out-sourced.

The PIU will be managed by a project manager, who has overall responsible for all aspects of the project. The PIU would include a project manager, a senior finance specialist, a procurement specialist and an office manager/secretary. The PIU will work with (a) the Project Steering Committee; (b) the SAPARD Managing Authority and Monitoring Committee; (c) the SAPARD Payment Agency; (d) the VI, PPI and CISS for laboratory development and (e) the CFA.

Project sub-components would be implemented by the responsible MAFWM department or Institute. A special person for monitoring environmental component of the project during construction has not been predicted.



### 3 REVIEW OF PROPOSED WORKS

The following table presents the legal pre operation procedure for the necessary construction works:

	land acquisition	EIA	location permit	construction permit	use permit	certification
<b>Croatian Food Agency</b>	n/a	n/a	n/a	applicable	applicable	n/a
<b>Plant Protection Institute with laboratory</b>	transfer of social to state capital	n/a	applicable	applicable	applicable	applicable
<b>Veterinary Institute with laboratory</b>	n/a	n/a	applicable	applicable	applicable	applicable
<b>GMO testing laboratory</b>	n/a	n/a	applicable	applicable	applicable	applicable
<b>Payment Agency</b>	n/a	n/a	applicable	applicable	applicable	n/a
<b>Veterinary and phytosanitary regional centers</b>	possible	n/a	applicable	applicable	applicable	n/a

#### 3.1 Current state

The following table presents the current state of the projects on 4<sup>th</sup> of July 2005.

	land acquisition	EIA	location permit	construction permit	use permit	certification
<b>Croatian Food Agency</b>	n/a	n/a	n/a	<b>Not in process</b>	<b>Not in process</b>	n/a
<b>Plant Protection Institute with laboratory</b>	<b>In process</b>	n/a	<b>In process</b>	<b>Not in process</b>	<b>Not in process</b>	<b>Not in process</b>
<b>Veterinary Institute with laboratory</b>	n/a	n/a	<b>Not in process</b>	<b>Not in process</b>	<b>Not in process</b>	<b>Not in process</b>
<b>GMO testing laboratory</b>	n/a	n/a	<b>Obtained</b>	<b>In process</b>	<b>Not in process</b>	<b>Not in process</b>
<b>Payment Agency</b>	n/a	n/a	applicable	applicable	applicable	n/a
<b>Veterinary and phytosanitary regional centers</b>	<b>Not in process</b>	n/a	<b>Not in process</b>	<b>Not in process</b>	<b>Not in process</b>	n/a

## **4 POLICY, LEGAL, AND ADMINISTRATIVE FRAMEWORK**

### **4.1 WB policies**

As for the other projects proposed for World Bank financing, in this case it is also required to prepare environmental assessment (EA) to help ensure that reconstruction / construction of facilities are environmentally sound and sustainable and as well to improve decision making related to the project. The Bank undertakes environmental screening of each proposed project to determine the appropriate extent and type of EA. The Bank classifies the proposed project into one of four categories, depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts.

In this way risks associated with project actions can be effectively anticipated in advance before project implementation and addressed by direct mitigation activities in the design, planning and construction supervision process as well as during the operation of the facilities.

The project has been classified as a category B project, meaning that the project might have potential adverse environmental impacts on human populations and/or environmentally important areas. The project has been classified like this based on some construction works to be financed in the establishment of the laboratories.

Land Acquisition in this context was not anticipated, as the Government has ownership of many possible land parcels, including state owned agricultural land in the vicinity of Zagreb. However, in the case of Plant Protection Institute, the remaining of unfinished process of privatization might delay the works, for the reason that land intended for the project is still registered as social ownership while it has to become state ownership. Other aspects of the project are limited to the purchase of office equipment and minor internal renovations. SAPARD grant recipients are required to conform to EU environmental standards for all supported investments.

### **4.2 Harmonization of EU policies with Croatian policies**

In April 2004, Croatian accession to the EU was officially confirmed through European Council Decision COM (2004)275 on European Partnership with Croatia in which principles, priorities and decisions for the accession are described. The Government of Croatia is actively working to meet the requirements of the Decision, which will enable the country to comply with EU requirements and obligations as laid down in the *acquis communautaire*.

In the field of Environment, the Ministry of Environmental Protection, Physical Planning and Construction in year 2000 started with process of approximation to EU legislative and process of harmonization of Croatian regulations to EU environmental *acquis* firstly through the project "Legislation Gap Analysis".

As a result of that Project and many other efforts a group of Environmental Laws is considered to be in line with EU legislative. This comprises the group of laws related to noise, energy and from the

beginning of this year waste (some parts are missing related to hazardous waste regulation – expected in 2005.).

Those laws cover the most important environmental issues not being completely covered by ISO 17025 procedure and ISTA certification.

### 4.3 Croatian policies

In the Project Appraisal Document and information gathered from the interviews with World Bank representatives, MAFWM, Veterinary Institute Seed and other relevant institutions about facilities and adjacent laboratories several different situations related to administrative procedures for procurement of documents proceeding construction works execution have been recognized:

1. **Land acquisition**
2. **Adaptation and maintenance without any changes of profile, size and purpose of the project;**
3. **Reconstruction that includes upgrade (building extensions)**
4. **Construction of new object on new location;**
5. **Takeover of already existing object used for other purposes, without any change of exterior form and size.**

Procedures needed to be carried out and permits obtained depend on type, or category of planned intervention.

Procedures preceding construction in Croatian legislative are: **land acquisition, environmental impact assessment (EIA), location permit** procurement and **construction permit** procurement.

For the type of projects / activities defined under AAC Project EIA is not required or suggested.

After issuance of all relevant permits, completion of construction works, and before utilization of the object, it is necessary to obtain **Operation Permit**.

#### 4.3.1 Land acquisition

Much of Croatia's land properties have gone through the process of denationalization and privatization in the '90 of the last century according to Law on Privatization (Off. Gazette no. 21/96, 71/97 and 73/00) and "Law on Compensation for the Properties Taken during Yugoslav Communist Regime" (Off. Gazette no. 92/96, 92/96., 39/99., 42/99., 92/99., 43/00, 131/00., 27/01., 65/01, 118/01. and 80/02). Today, in current system the regular market laws and market prices are applicable. Only related to strategically important land properties, the State has the right to buy the private property without consent of the owner.

However, there are still remainings of land properties being used by Government or private parties that did not go through the process of denationalization and are still classified as social capital. Before any construction works can be allowed on the property marked as "social", transformation of social capital has to be conducted into state or private capital. This to be done, a Court order has to be issued and property transformed into private or state depending on the entity using it or according to

the Law on Compensation for the Properties Taken during Yugoslav Communist Regime, depending on entity that claims the right to it.

In the case of land property intended for Plant Protection Institute, the conversion will undergo easily unless external entity claims the right to it. This issue has to be investigated, for any claim might delay the process for several years.

#### **4.3.2 Location permit**

Location permit is administrative document defined by the Law on Physical Planning (Off. Gazette no. 30/94, 68/98, 35/99, 61/00 and 32/02). It is issued based on Zoning documents (every spatial intervention needs to be in compliance with zoning documents) and on special related laws and regulations.

Location permit defines important characteristics of planned intervention like: form and size of construction lot, purpose, size (height, number of floors) and area of the constructed object, auxiliary objects on construction site (garages, storages, septic tanks, etc.), architectural form of the object (roof, materials and other factors depending on surroundings), site organization, methods and conditions of connection of the object to public traffic surface (including parking lots) and communal infrastructure, mitigation measures related to environment (if intervention notably effect environment by its operation) and other elements important for spatial intervention.

Location permit needs to be issued for every spatial intervention, except for cases specially defined in regulations (The Rule Book on Spatial Intervention that do not Require Procurement of Location Permit - Off. Gazette no. 86/04 and 138/04).

Related to new constructions, location permit is not required if they are spatial interventions planned on the area for which detailed Zoning plan has been made. Official **excerpt from Zoning plan** serves as statement.

According to The Rule Book on Spatial Intervention that do not Require Procurement of Location Permit (Off. Gazette 86/04 and 138/04), following activities do **not require issuance of location permit:**

- under point 2: "adaptation and maintenance without any changes of profile, size and purpose of the project"
- construction or installation of connection of the building to low-voltage and telecommunication grid, water supply line, sewerage, gas pipeline, cable TV and heating system. However official approval of service provider with its instructions are required and need to be acquired prior any works.
- site restoration, construction of water cistern and septic tank, alignment of solar plates, construction of underground or ground storage of fuel up to 10 m<sup>3</sup>.

Important notice:

If construction works are performed on an object protected as cultural monument, prior to any kind of works (for spatial intervention that do not require location permit) it is necessary to obtain an official approval from the regional authorized body (Regional Office for Monument Protection).

For the projects (activities) defined under **points 3., 4. and 5.** issuance of location permit **is necessary.**

Jurisdiction:

Works and activities related to spatial planning are under jurisdiction of Regional Office of the region in which project is planned. For attaining location permit it is necessary to submit:

- official cadastre data
- description of planned intervention

Period for issuance of location permit is 30 days from the day of application for location permit of planned intervention and delivery of various approvals and decisions of authorized bodies (collection of approvals is under jurisdiction of Regional Office issuing Location permit). Location permit is valid for 2 years.

It is important to mention that Location permit does not stipulate any conditions of environmental protection nor mitigation measures **during construction** of the object. Location permit assesses the object in its final form and in its future service, therefore assesses environmental impacts inclusively **during operation.**

#### **4.3.3 Construction permit**

Construction permit is administrative document defined by the Law on Construction (Off. Gazette no. 175/03 and 100/04). After verification and issuance of the permit construction may start.

Construction permit confirms that the Main project is in compliance with Location permit and all special conditions issued by authorized bodies and obtained in the Location permit procurement procedure. In addition, Main project conformity to important construction regulations defined in the Law on Construction are evaluated. For instance: mechanical resistance, stability of building, fire protection, sanitary health and environmental conditions, operational safety, energy efficiency, thermal insulation, access and mobility in the object. The ownership and the construction rights on the parcel are as well defined.

Construction permit needs to be issued for every construction, except for cases specially defined in regulations. Related to constructions under AACP, **Construction permit is not required** for constructions that fall under following categories:

- under point 2 "Adaptation and maintenance without any changes of profile, size and purpose of the project"

- under point 5 "Takeover of already existing object used for other purposes, without any change of exterior form and size"
- cable and air connections of the object to the low-voltage electrical grid, telecommunication grid, and connection to communal installation (water supply line, sewerage, gas pipeline, thermal pipeline)

For the projects (activities) defined under **points 3., and 4.** issuance of Construction permit **is necessary.**

#### Jurisdiction:

Works and activities related to construction are under jurisdiction of Regional Office of the region in which project is to be build. For attaining Construction permit it is necessary to submit following documentation:

- Location permit or excerpt from Zoning plan
- 3 copies of Main project
- Main project assessment (written report)
- Reports on geotechnical works (if were used for main project)
- Evidence that legal or physical entity submitting the request for permit has a right to build on the parcel in question.

For speeding up the process it is recommended to enclose written approvals of all parties (neighbors) on the Main project. Period for issuance of Construction permit is 30 days from submission of request and obtaining certificates defined in article 82 of the Law on Construction. Validity of construction permit ends if works do not begin within period of two years.

Related to EMP, it is important to mention that Construction permit does not usually stipulate any conditions of environmental protection nor mitigation measures **during construction** of the object. In Construction permit fire protection measures, sanitary implementation conditions, building insulation work protection and application of all conditions stipulated in Location permit are assessed, however inclusively **during operation phase** of facility.

Often, the only conditions related to environment during construction of the object are one related to monument protection. If encountering archaeological finds during preparation of the site for the construction, the contractor should stop the works and notify Regional Institute for Protection of Cultural and Historical Heritage. A special condition of construction will be issued in Construction and Location permit if the building being renovated is protected as a cultural monument.

#### **4.3.4 Operational permit**

Operation permit is issued after technical assessment of the constructed object, if proven that the object has been constructed in compliance with Construction permit requirements and the Main project.

#### **4.3.5 EMP and administrative procedures preceding construction**

Environmental Management Plan (EMP) comprises procedures whose purpose is to recognize and control the quality of environment and to identify and implement measures in the process of realization of investment, aiming at mitigation of negative environmental impacts and environmental protection.

EMP is not a requirement in Croatian laws and acts, i.e. EMP as an obligatory or binding document does not exist in the preparation of any investment projects, however some elements usually found in EMP are prescribed in permits and documents preceding construction.

By analyzing Croatian legislative related to administrative documents preceding construction, and bearing in mind conditions that EMP stipulates following can be concluded:

- o If required, detailed environmental measures are proposed in Environmental Impact Assessment and are becoming obligatory when MEPPPC issues a Decision on Environmental Conditions which become part of Location Permit
- o Location permit and construction permit consider object as completed building and in its operational function, therefore location and construction permit comprise environmental protection measures mostly only for the phase of operation.
- o Implementation of EMP during operation is ensured through implementation of conditions and environmental protection measures prescribed by administrative documents preceding construction.
- o For the construction phase usually there are no conditions or environmental protection measures neither in Location permit nor Construction permit, therefore requirements for environmental protection cannot be implemented through administrative procedure since they are not defined.
- o The Implementation of EMP during construction, is excluded from legal procedures of obtaining permits and therefore recommendations for design shown in this EMP will not be reviewed in legal procedure. The degree to which environmental guidance's are incorporated will not be known.

## 5 ENVIRONMENTAL MANAGEMENT PLAN

**Environmental management plan (EMP)** comprises procedures whose purpose is to recognize and control the quality of environment and to identify and implement measures in the process of realization of investment, aiming at mitigation of negative environmental impacts and environmental protection.

The World Bank calls for implementation of EMP during realization of investment for which their funds have been approved, as assurance that works will be performed on a certain quality level. In contrast, **in Croatian laws and acts, EMP as an obligatory or binding document does not exist** in the preparation of any investment projects.

Therefore, it is necessary to propose organization of the EMP implementation as well as the content of EMP, aiming at usefulness and feasibility in expert evaluation as well as in administrative procedures and realization.

In line with previously mentioned, EMP has to comprise recommendations and measures of environmental protection for the phase of design, construction (reconstruction) and operation. In addition, the implementation of EMP should be supervised and monitored, as described further in the document.

### 5.1 Identification of possible environmental issues

The activities supported by the project comprise as described in the scope of the project, the reconstruction or construction of the new buildings and laboratories. The immediate impact on the environment especially related to reconstruction activities would be minimal. According to Croatian Laws, for the construction of proposed type of facilities, the Environmental Impact Assessment (EIA) is not necessary, which indicates that the impacts on the environment by this type of projects are limited.

Possible environmental issues can be clearly separated in two categories, one related to construction and other related to operation. The main type of environmental issues that derive from the actions during construction / reconstruction are following:

- Dust and noise due to the demolition and construction
- Disposal of construction waste

while the one related to operation are:

- Risk associated with handling wastes during operation (municipal, hazardous, etc.)
- Risks associated with the maintaining necessary environmental conditions in the laboratories

All these risks can be effectively dealt with, since they are recognized through this EMP in pre-design phase. In this project, implementation **of mitigation measures can be advised on three levels: design, construction/reconstruction and operation.** These measures should be feasible, and cost effective aiming at eliminating, offsetting and reducing adverse environmental impacts. The measure should not only deal with recognized risks, but should as well be used as guidance to make facilities more environmentally friendly and sustainable.



## 5.2 Environmental Guidelines

The Environmental Guidelines address environmental and ecological/biologic concept, design and planning of small-scale projects for strengthening Veterinary and Plant Health Services and guideline for construction and renovation of office buildings. The guidelines cover the handling of construction debris generated, selection of construction materials and construction methods with limited impact on the environment, energy saving methods as well as the handling of hazardous and non-hazardous wastes, and storage of hazardous materials under project supported activities. The guidelines are a base for design, training, research, discussions and workshops.

A special attention should be given to the design and operation of laboratories, which will be either ISO 17025 certified or ISTA certified.

### 5.2.1 Design phase

In the design phase many important issues could be approached, investigated and best choices incorporated into design. Designer has a choice on orientation of the object and rooms within the object, design of object in a manner that are energy efficient, recommendation of types of materials, adaptation of building to exterior landscape and surrounding architecture. The most important aspect of the design applicable to the construction of the laboratories in case of AACP is the ability to implement preferences of ISO 17025 for the new Veterinary Institute and Plant Protection Institute laboratories and ISTA (International Seed Testing Association) certification rules for the new laboratory for genetically modified organisms (GMO) testing under Institute for Seeds and Seedlings.

#### Design inline with standards

For the design of laboratories it is highly recommended to use an **expert advice on laboratory design** according to Good Laboratory Practices, ISO standards and ISTA rules. In ISO 17025 among many factors that determine correctness and reliability of the tests and /or calibrations performed by a laboratory are as well accommodation and environmental conditions. The design should be in line with needs of laboratories, and especially due attention should be paid to possibility to regulate biological sterility, dust, electromagnetic disturbances, humidity, electrical supply, temperature and sound and vibration levels as appropriate to the technical activities concerned. Effective separation between neighboring areas in which there are incompatible activities. All the measures can only be achieved with the appropriate design team.

#### Orientation of the object and rooms within

The object and the rooms should be oriented to use in the best way the seasonal impacts of climate, internal thermal load, and characteristics of exposure. Orientation relative to insolation and prevailing refreshing summer winds is one of the factors most frequently not regarded in site planning. Window location should be determined on view, ventilation, light, thermal gain, privacy control and interior space functions. The orientation of the rooms within the object regarding the best use of insolation

should also be taken into consideration. The planning should also take into consideration the issue of security especially in the case of Payment Agency.

For the laboratories, the orientation should be in line to achieve in the best way control of environmental conditions necessary in the lab. Because the handling and storage of hazardous materials inherently carries a higher risk of exposure and injury, it is important to segregate laboratory and non-laboratory activities. In the event of an emergency, the laboratory may be unsafe to enter. Hence, the auxiliary valves for gas and vacuum lines should be located outside the lab. A special attention shall be given to the design of storage area for cylinders of compressed gas, bearing in mind heat sources, ventilation, etc.

### Energy efficiency

In the office buildings a high-efficiency systems for heating domestic water (including solar systems) and for interior space heating should be selected with maintenance and long term running costs in mind. Plumbing should be coordinated to minimize plumbing and also water service to toilets, kitchen and utility rooms. Water-saving faucets, ring mains and other devices also require consideration. In the laboratory use of variable air hoods in lab to save energy is advised, or adjusting ventilation system. It is recommended to anticipate use of more efficient and energy saving chillers, energy & water equipment.

### Choice of materials

Designer should consider environmentally sound materials yet applicable for the purpose. Depending on the purpose materials should be durable, easy to clean, soundproof, should not retain dust easily, etc.

**For the office spaces** (and spaces where no specific activities are conducted) tradition tile, marble, stone and terrazzo floors can be hard to stand and walk upon but have proven durability. Nontoxic grouts and methods of installation should be used. For exterior walls insulation it is recommended to use natural insulation materials like opeka, or if not feasible place insulation materials on concrete walls, like mineral wool, materials that do not absorb water and do not conduct heat commercially known as stiopor, ortipor and others, or any environmentally friendly material with low thermal conductivity.

Paints for wall or plaster surfaces should be water-based interior nontoxic, no allergenic paint instead latex or oil-based paints from a respiratory standpoint. Nontoxic finishes are available but expensive. Selecting the least toxic finishes is advised.

High pressure plumbing lines should be zinc plated, while copper pipes should be used for joints and solders. For waste lines cast iron should be preferred to avoid PVC outgassing. Exposed plumbing and pipe insulation should be of nontoxic material.

There is variety of choices for window blinds. Vertical blinds provide light control, are easy to maintain, and require minimal stacking room. Horizontal blind can in combination with a white or light ceiling reflect daylight more deeply into a room. The most recommended are exterior roller blinds that

are common element in Croatian architecture, and can be operable from the interior. They are particularly effective in controlling solar thermal gain and interior heat loss, and give the benefit of security. Direct solar radiation can be attenuated by fabric meshes.

**For the laboratories** the design should be subjected to the needs of testing and facilitating the maintenance of the lab.

Special consideration should be given to the choice of fireproof construction for the buildings. Large sections of glass shall be shatter resistant. Floors should be covered up to the walls and cabinets to ensure spills cannot penetrate underneath floors/cabinets. The floor must be non-pervious, one piece, and with covings to the wall. This can be achieved by use of glue, heat welded vinyl flooring, epoxy coated concrete slab, etc. Floors in storage areas for corrosive liquids shall be of liquid tight construction. All labs should be designed to conveniently and safely accommodate the temporary storage of biological, radiological, and chemicals (non-waste and waste) based on laboratory use projections. Wastes are generally stored in the lab in which they are generated, not in centralized accumulation areas. All furniture must be sturdy. All work surfaces (e.g., bench tops and counters) must be impervious to the chemicals used. The laboratory doors should be automatically self-closing. Such self-closing doors are to be able to be opened with a minimum of effort as to allow access and egress for physically challenged individuals. Walls should be painted with washable, hard non-porous paints.

#### Indoor air quality

Adapting an old building might imply that materials build in are no longer produced or used and now, in current form may seriously effect ambient air quality.

Building material such as particleboard, plywood, urea-formaldehyde foam insulation and various adhesives emit formaldehyde. Chipped and peeling paint containing lead becomes airborne toxic dust. Some pollutants are somewhat unique in indoor environment, such as asbestos used for fireproofing, heating system insulations, floor and ceiling tiles, roofing felts and shingles; radon gas which steps out of soil and collects in the houses and biological pollutants, such as house dust mites, fungi and other microorganisms usually retained in textile based floors which are difficult to maintain.

When preparing reconstruction / adaptation plan these issue should be kept in mind and a special attention should be put on replacement of materials and on the choice of new. By the design of new buildings infiltration should be minimized. A system for proper natural and if applicable forced ventilation should be designed. Using electrostatic, activated charcoal, and high-efficiency filters can greatly improve the indoor air quality.

Smoking areas or rooms, if any, should be isolated by partitions and equipped with outside exhaust that creates a negative pressure in the space. Certain medical equipment, copy machines, as well as other reproduction equipment, should be adequately ventilated to remove their particulates and gases.

In many laboratories, special air conditions should be maintained. While designing, it is necessary to enable maintenance of certain air quality condition in the laboratories, like ventilation, temperature, humidity, etc. depending on the technical needs of lab. The rooms should have mechanically gener-

ated supply air and exhaust air. All lab rooms should use 100% outside air and exhaust to the outside. There should be no return of fume hood and laboratory exhaust back into the building.

### Exterior

The design of the buildings should respect the rules of physical planning with its form and fit into surrounding architecture by not blemishing the landscape. For the pedestrian zone that has to be paved, natural material like stone should be preferred, if it is cost justifiable. Pressed concrete blocks or elements made from pressed stone waste can be a good alternative. It is important to avoid asphalt, one-piece concrete surfaces or other materials that do not allow water circulation. Impermeable surfaces are recommended on parking lots and access roads (ways). It is necessary to plan access to the facilities depending on trucks, etc.

If objects have historical gardens, they have to be re-cultivated in a way to respect they historical matrix and flora. When designing new open spaces, it is necessary to form land and vegetation to create corners of privacy. It is highly recommendable to use autochthon plants for decoration.

### Special topics – wastewaters

Wastewaters effluents from the buildings go directly to sewer system. For the laboratories conditions regarding handling of the waste waters will be stipulated in location and construction permit. For the small scale laboratories the practice is the same as in office buildings. In some cases Croatian Waters and Water Directorate issue a special conditions for water protection and demand treatment of the waste waters before the release depending on activities in the laboratory. Since the whole AAC Project aims to harmonization of Croatian and EU legislative it is recommended to leave space in the design for usual European practice regarding the wastewaters in laboratories.

## **5.2.2 Construction / reconstruction phase**

In the construction phase the emphasis is on possible environmental impacts that follow construction works. Issues that could be addressed are: construction and other waste management, minimization of dust and noise, top soil management, procurement of construction material, site restoration, temporary storage of the material, storage of hazardous materials, archeological and monument finds, traffic management plan, working hours, recruitment, encroachment into the neighbor territory.

It is essential to mention that prior any start of construction works it is mandatory to facilitate normal work.

### Recruitment of workers

Respecting the social component of sustainable development, it is highly advised to hire local workers on the construction of new objects and restoration. The use of local knowledge and crafts is also recommendable.

### Noise reduction

Before any beginning of the work it is recommended to inform neighbors either directly or through local bulletins or newspapers on the construction of new objects and reconstruction. The noise should be limited by using good management practice and limiting works on regular daily shift. The equipment and machinery used should be calibrated according to the Rule Book on Highest Permitted Levels of Noise in Working and Living Environment (Off. gazette 145/04) and the Law on Noise Protection (Off. gazette 20/03).

### Dust minimization

Temporary technical solutions and measures for dust minimization during construction should be used. For the transportation of earthlike or any other dusty material to the construction site or of the construction site watering or covering of the cargo should be implemented. Reduction of dust on construction / reconstruction site during dry season of the year can be accomplish by watering the ground surface. Water should not be wasted. Reducing speed can be another applicable measure. Workers that perform demolition should be introduced with safety equipment, while dust from the object can be prevented by enclosing of construction site.

### Construction waste

It is mandatory that contractor prior to start of the works asks the Institution to remove all equipment and material that will no longer be used and to dispose it or recycle it in a proper manner.

Wastes where ever possible should be minimized, separated and handled accordingly. It is possible to separate these types of wastes:

1. construction debris: tiles, bricks, concrete and other waste with similar properties from demolition;
2. wood: doors, window frames, floors, etc.;
3. plastics: coating, blinds, etc.;
4. glass: from windows and doors;
5. metals: boilers, kettles, coated tubs, sinks;
6. electrical waste: insulation materials, wires, etc.;
7. sanitary materials: bathtubs, ceramic sinks, toilets.

When waste is separated as advised in the Law on Waste (Off. Gazette no. 178/04) it is more manageable. Some materials like doors or ceramics sinks might be usable on the site again. Non-usable materials should be taken to appropriate place for recycling. For non recyclable wastes, in arrangement with municipality waste will be deposited on legal landfills. Open burning and illegal dumping of any waste is strictly prohibited.

In addition to solid waste, some amounts of hazardous wastes will be produced on the site: like the remaining from paints, enamels, oiled packaging, oils, material contaminated with oil, insulation material containing asbestos etc. The procedure on handling this type of waste is defined in the By-law on

Hazardous Waste Management (Off. Gazette no. 123/97) and the Rule Book on Categories, Types and Classification of Waste (Off. Gazette no. 50/05). All waste has to be collected and handed over to the company authorized for collection and transportation of hazardous waste.

#### Top soil management

Stripped top soil should not be thrown, but kept on the site for restoration after completion of works. Any prevailing trees and valuable vegetation should as well be stored and used later for restoration.

#### Procurement of construction material

Environmentally sound goods and services should be selected. Priority should be given to products meeting standards for recognized international or national symbols. Traditionally well-tried materials and methods should be chosen before new and unknown techniques.

#### Site organization and restoration

Construction sites should be fenced off in order to prevent entry of public, and general safety measures would be imposed. Temporary inconveniences (traffic or other) due to construction works should be minimized through planning and coordination with contractors, neighbors and authorities. After completion of works the site should be restored as planned in the design. All wastes and machinery should be removed from the location.

#### Temporary storage of material (including hazardous materials)

Stockpiling of construction material should be avoided if possible. If not, construction material should be stored on the construction site, and protected from weathering. Hazardous materials like paints, oils, enamels and others should be kept on impermeable surface, and adsorbents like sand or sawdust should be kept for handling small spillage. Handling with the material should be consistent with the instructions on Material Safety Data Sheets.

#### Encroachment into neighboring territory

Encroachment into neighboring territory should be avoided if possible. In case where maneuvering surface is too small, approval for the encroachment should be asked. Any accidental damages of the neighboring properties should be recovered and brought in the condition as it was prior to the construction.

#### Archeological and monuments finds

If encountering archaeological finds during preparation of the site for the construction, the contractor should stop the works, respond immediately and notify the municipal authorities, the Regional Institute for Protection of Cultural and Historical Heritage and the project team in the MAFWM.

### Working hours

To avoid noise and disturbance of neighbors the works should be conducted in a daily shift, meaning from 7 am to 5 pm. For other working hours special permits are required.

### **5.2.3 Operation**

During the operation the main emphasis in the office building will be on maintenance and waste management. In laboratories a special attention should be on general procedures coming from accreditation and special focus on hazardous waste management.

### Maintenance

For the office spaces (and spaces for unspecific activities) it is recommendable to create a maintenance manual to plan, schedule and track activities. Works like regular ventilation should be carried out on a schedule. Maintenance of ventilation systems, including duct cleaning, filter cleaning and changes, and cleaning positive plate receivers and ionizing tips should be routine. Exterior green surfaces should be attended, watered and fertilized. Access roads regularly cleaned and maintained. The maintenance manual in high security buildings like Payment Agency is highly recommendable for the reason that can combine environmental measures with security procedures.

The laboratories certified by certain norms, should develop a list of procedures for laboratories and develop custom laboratory practice. As ISO 17025 suggests measures to ensure good housekeeping, special procedures shall be proposed where necessary. Since employees will accept this system as working, it is suggested to create several environmental procedures that will through implementation of ISO become standard practice, and therefore be regularly checked and improved.

### Operation emergency plans

While screening pre-investment documents it is concluded that majority of institutions will have in their storages more than 5000 kg of crude oil or 500 kg gas as energy source. Based on the Law on Environmental Protection (Off. gazette no. 82/94) and under the Plan of Intervention in Environmental Protection (Off. gazette no. 92/96), it is necessary to prepare Operation Emergency Plans for these facilities.

### Waste management

It is recommendable that each institution issues internal manual for waste management. In this manual possible waste types would be identified and for each handling would be described.

If the object is not connected to sewer system on a location, a contract with company for maintaining septic tanks should be made.

In all laboratories some amount of hazardous waste will occur, and therefore it is highly recommended to issue internal waste management manual. The waste (hazardous and non-hazardous) should be separately stored and collected according to Rule Book on Categories, Types and Classifica-

tion of Waste (off. Gazette no. 50/05). This waste can be on location stored for maximum one year. The waste should be handed to the hazardous waste authorized company.

A special attention should be given to the laboratories, where different kind of hazardous waste might occur. In the Veterinary institute the animal carcass and residues should be stored before testing in a cold chamber build specifically for that purpose. After testing, waste need to be incinerated according to the Rule book on Handling Animal Carcass and Waste of Animal Origin and its Destruction (Off. Gazette no. 24/03). A special attention should be given to contaminated tissues.

In the GMO testing laboratory, the practice with waste should be developed in a way to secure that GMO waste material will be deactivated before release in the environment according to the Law on Genetically Modified Organisms (Off. Gazette no. 70/05). Special measures should be provided on waste waters in the laboratories, especially contaminated with GMOs.

It is necessary to comply with reporting procedure on waste.

#### Hazardous materials storage

It is necessary to develop procedures for safe handling, transport, storage of hazardous materials, in accordance to Material Safety Data Sheets and Law on Chemicals (Off. Gazette no. 173/03)

#### Audits

In the laboratory, periodically on predetermined schedule and procedure it is recommended to conduct internal audits of activities to verify that operations comply with the requirements of management system of testing activities as defined in norm ISO 17025 including activities related to environment.

The laboratory can in this way continually improve efficiency of its management system through use of quality policy, objectives, audit results and corrective and preventive actions.



### 5.3 Mitigation

PHASE	ISSUE	MITIGATION MEASURES	COSTS	INSTITUTIONAL RESPONSIBILITY	COMMENTS
DESIGN	<b>Reviewing design plans for construction and adaptation of offices</b>	Implementation of measures proposed by EMP	Included in the project costs Not significant	Design team	This is not legal requirement, but it is recommended to become binding requirement
	<b>Review laboratory design according to standards and EU practices</b>	Implementation of measures proposed in EMP and expert opinion on laboratory design	Included in the project costs	Design team in cooperation with lab design expert	Not legal requirement but highly recommended to become binding requirement and ensure EU harmonization
	<b>Impact on landscape and urban areas</b>	New buildings shall be designed according to local constructing (and cultural) practice (respect of surrounding architecture)	Included in cost of procurement of construction permit	Reviewed by institution issuing construction permit Regional Office for Construction (under MEPPPC <sup>1</sup> )	
CONSTRUCTION	<b>Noise</b>	Construction is restricted to 5 days a week and only dayshift (7 am to 5 pm). Machinery has to possess attest (needs to be calibrated for certain noise level)	Not significant	Contractor	Will be specified in bidding documents (compliance with EMP)
	<b>Dust</b>	Dust from demolition and transportation of construction material and waste will be minimized by use of water and enclosure of cargo If demolition in the object presents high source of dust site can be enclosed	Could be significant if construction is done in the dry period of the year	Contractor	Will be specified in bidding documents (compliance with EMP)

<sup>1</sup> Ministry of Environmental Protection, Physical Planning and Construction - MEPPPC

PHASE	ISSUE	MITIGATION MEASURES	COSTS	INSTITUTIONAL RESPONSIBILITY	COMMENTS
<b>CONSTRUCTION</b>	<b>Construction waste</b>	<p>Hazardous waste has to be separated from solid waste</p> <p>For hazardous waste (paints, oils, etc.) contractor has to follow procedure for hazardous waste management, this implies collection, handing over the waste to authorized company for hazardous waste management and fulfilling accompanying documentation</p> <p>All recyclable fractions have to be separated from non recyclable waste and taken to appropriate collection points with accompanying documentation</p> <p>Non recyclable waste has to be take to approved landfill</p> <p>The building site will be cleaned and all debris and waste materials will be disposed of in accordance with clauses specified in the bills of quantities</p> <p>Burning or illegal duping of waste is strictly forbidden</p>	Significant (depending on quantities of hazardous waste)	Contractor (or other entity, depending on the Contract)	<p>Will be specified in bidding documents (compliance with EMP)</p> <p>The By-Law on Hazardous Waste is going to be updated in 2005, therefore revision will be necessary</p>
	<b>Replacement of asbestos containing materials and other hazardous materials</b>	<p>Replace asbestos and other not environmental friendly material from the building</p> <p>Insulation material containing asbestos is defined as hazardous waste and it has to be handled accordingly</p>	Significant cost	Contractor	Will be specified in bidding documents (compliance with EMP)

PHASE	ISSUE	MITIGATION MEASURES	COSTS	INSTITUTIONAL RESPONSIBILITY	COMMENTS
<b>CONSTRUCTION</b>	<b>Degradation of historical or culturally important sites</b>	Supervising construction, If encountering archaeological finds during preparation of the site, the contractor should stop the works and follow the procedure to notify authorized bodies If works are on historical monument, the construction workers should follow the special condition of construction	Not significant cost	Contractor	Notify: Municipal Authorities, Regional Institute for Protection of Cultural and Historical Heritage Project Team in MAFWM.
	<b>Waste water</b>	Connection to sewage system, if no possibilities to connect, construct septic tank or other, depending on lab design Rehabilitation of adequate sanitary facilities, including appropriate disposal of waste water and sewerage	Significant cost (part of investment)	Water State Authority issues a permit Contractor	Will be specified in bidding documents (compliance with EMP)

PHASE	ISSUE	MITIGATION MEASURES	COSTS	INSTITUTIONAL RESPONSIBILITY	COMMENTS
<b>OPERATION</b>	<b>Heating system and storage tanks for crude oil or gas</b>	Fire protection measures have to be implemented Emergency Operation Plan has to be done if fuel storage exceeds mass of 5000 kg (crude oil) and / or 500 kg of gas	Relevant costs	Operator (Under supervision of MEPPPC)	
	<b>Municipal waste management</b>	Organized solid waste separation, Collection of recyclables organized collection of non recyclable solid waste Introduction of measures for minimization of waste production, Coordination with local waste management plan	Not significant through period of years	Operator	
	<b>Certification (ISO 17025 and ISTA)</b>	Prepare management system according to standards and include environmental procedures in it	Incremental to the cost of certification	Operator	To incorporate environmental measures in the certification procedure is not a binding requirement, however it would facilitate the management of environmental issues in the laboratories

PHASE	ISSUE	MITIGATION MEASURES	COSTS	INSTITUTIONAL RESPONSIBILITY	COMMENTS
<b>OPERATION</b>	<b>Hazardous waste</b>	<p>Develop plan (manual) for waste management</p> <p>Collect and separate waste within facility</p> <p>Hand over waste to authorized company for hazardous waste management</p> <p>Follow binding reporting procedure on hazardous waste</p> <p>For GMO waste develop procedure and organize deactivation.</p> <p>For animal residues waste and contaminated material waste act in accordance to Rule book on Handling Animal Carcass and Waste of Animal Origin and its Destruction</p>	Can be significant	Operator	The By-Law on Hazardous Waste is going to be updated in 2005, therefore revision will be necessary
	<b>Storing</b>	Hazardous waste should be stored according to Material Safety Data Sheets.	Initially relevant (one time cost)	Operator	Facility designs should address the need for storage

## 5.4 Monitoring Plan and Supervision

Monitoring of construction is a part of procedure for obtaining Operation permit.

<b>PHASE</b>	<b>WHAT</b> Parameter is to be monitored?	<b>WHERE</b> Is the parameter to be monitored?	<b>HOW</b> Is the parameter to be monitored?	<b>WHEN</b> Is the parameter to be monitored (frequency)?	<b>WHY</b> Is the parameter to be monitored?	<b>COST</b>	<b>RESPONSIBILITY</b>
<b>Design</b>	Implementation of EMP guidelines (RECOMMENDATION)	Design project for construction, reconstruction and adaptation	Review of elaborates and adaptation designs	Prior approval for construction as part of project monitoring program	It is recommended for the reason that adaptation by Croatian law do not need construction permit.	Should be part of the project	MAFWM, designer and Lab design specialist
<b>Construction</b>	Parameters given in construction permit - all special conditions of construction issued by different bodies (up to 19 bodies like water company, electrical company, etc.)	Main project documentation	Part of regular inspection of MEPPPC (regional offices)	During the construction, and before Operation permit is issued	Regular review stipulated in the Law, and if any public complaint is sent to the Ministry (MEPPPC)	Included in the process	Supervising engineer and Regional Construction Inspectorate (under MEPPPC)
	Construction waste management (including hazardous)	Thru waste accompanying documentation that is submitted to MEPPPC		After reporting on waste management in MEPPPC	Required by series of regulation on waste	Cost of MEPPPC and small cost for contractor	Supervising engineer MEPPPC
<b>Operation</b>	Hazardous waste management	Thru waste accompanying documentation that is submitted to MEPPPC,	Reports to MEPPPC	After reporting on waste management in MEPPPC,	Required by series of regulations on waste	Cost of MEPPPC and operator	MAFWM and MEPPPC
	GMO waste	Through reporting and permits for GMO handling (including methods of deactivation)		continuous	Required by Law on GMOs		State Inspectorate

<b>PHASE</b>	<b>WHAT</b> Parameter is to be monitored?	<b>WHERE</b> Is the parameter to be monitored?	<b>HOW</b> Is the parameter to be monitored?	<b>WHEN</b> Is the parameter to be monitored (frequency)?	<b>WHY</b> Is the parameter to be monitored?	<b>COST</b>	<b>RESPONSIBILITY</b>
<b>Operation</b>	Certification	On site and in the documents	Regular audits	As prescribed in norms	Required by norms	Could be significant	Operator
	Wastewaters from laboratories	On site and documentation	Sampling	As requested (and if requested) in special wastewater conditions	If wastewaters untreated present danger to environment (a special wastewater conditions issued)	Could be significant	Croatia Waters
	Implementation of EMP and regular check of facility functioning	On site, documentation	If made a part of standard practice in lab, through regular audits related to certification	Continuous	As suggested in EMP, insurance that the bank investment has been used properly	Significant, MAFWM	Team at MAFWM, institution in question

## 5.5 Capacity development and training

Related to conclusions originating from comparing permits procurement procedures and EMP and bearing in mind administrative organizations and jurisdiction of administrative bodies participating in the process of issuance of permits, integrating existing institutional organization of environmental protection, it is necessary to arrange activities in accordance to jurisdiction of state and regional bodies, but as well arrange some new activities for which organization has to be made up.

- The weakest link and most influential part related to waste management and accidents related to it present the design phase and for that reason a special attention and supervision during that stage is recommended. A team of representatives of MAFWM, designer and lab design expert should be formed and measures recommended in EMP incorporated.
- Since the construction works are not extensive, it is not necessary to form special environmental supervision, but submit EMP in form of Good Construction Practice to Constructor and make it binding condition. Works could be supervised in form of design implementation supervision.
- The training in laboratories are continues and the emphasis on training will be given through certification. If environmental procedures are added to Custom laboratory practices, no extra activities would be necessary.



## 6 LITERATURE

- The World Bank operational Manual 4.01: Operational policies: Environmental Assessment (2004)
- The World Bank operational Manual 4.01: Bank procedures: Environmental Assessment (2004)
- Environment Department World Bank: Environmental assessment sourcebook Update: Environmental Management Plans
- Environment Department World Bank: Environmental assessment sourcebook Update: The World Bank and Environmental Assessment: An Overview

## **7 APPENDICES**

### **7.1 THE LIST OF THE NATIONAL LEGISLATIVE AND SUB -LEGISLATIVE ACTS REGULATING ENVIRONMENTAL PROTECTION**

#### **Environmental and Nature Protection**

- The Law on Environmental Protection - Off. Gazette No. 82/94, 128/99
- The Law on Physical Planning (Zoning) – Off. Gazette No. 32/02, 35/99, 68/98, 30/94
- Regulation on Environmental Impact Assessment – Off. Gazette No. 59/00, 136/04
- By–Law on Environmental Information System - Off. Gazette No. 74/99 and 79/99
- Environmental Protection Emergency Plan - Off. Gazette No. 82/99, 86/99, 12/01, 14/01
- Rule Book on Environmental Emission Inventory - Off. Gazette No. 36/96
- The Law on Nature Protection - Off. Gazette No. 70/05
- The law on Cultural Monuments Protection - Off. Gazette No. 52/94
- The Law on Environmental Protection and Energy Efficiency Funds - Off. Gazette No. 107/03
- The Law on Hunting - Off. Gazette No. 10/94, 5/95, 25/96, 33/97,44/98,29/99
- The Law on Protection and Preservation of Cultural Values - Off. Gazette No. 69/99
- Rule Book on Mammal Protection (Mammalia) - Off. Gazette No. 31/95
- Rule Book on Birds Protection (Aves) - Off. Gazette No. 43/95
- The Law on Acceptance of Convention on the Conservation of European Wildlife and Natural Habitats (Bern convention) - Off. Gazette No. 6/00

#### **Air protection**

- The Law on Air Quality Protection- Off. Gazette No. 48/95
- By-law on Recommended and Limit Values of Air Quality - Off. Gazette No. 101/96, 2/97

#### **Water Protection**

- The Law on Water - Off. Gazette No. 107/95
- The Rule Book on Issuance of Water Management Documents - Off. Gazette No. 28/96
- By-law on Hazardous Substances in Water - Off. Gazette No. 78/98
- Regulation on Limit Values of Indices, Hazardous and Other Substances in Waste Water - Off. Gazette No. 40/99; 6/01
- Instructions for Keeping Records on The Frequency of Discharging of Hazardous and Harmful Substances into Water, of Quantities and Composition of Such Substances, and on the Procedures of Submitting Such Data to Public Water Management Enterprises - Off. Gazette No. 9/90
- Decision on Water Use Charge - Off. Gazette No. 15/91, 19/92, 79/92, 84/92,1/94

- Decision on Water Protection Fee - Off. Gazette No. 15/91, 19/92, 79/92, 84/92, 1/94
- Decision on Determining Catchments Areas –Off. Gazette No. 20/96, 98/98, 5/99
- Regulations On The Establishment Of Sanitary Water Source Protection Zones – Off. Gazette No. 55/02.
- The List of Authorized Laboratories – Off. Gazette No. 107/00
- National Water Protection Plan – Off. Gazette No. 8/99

### **Noise Protection**

- The Law on Noise Protection - Off. Gazette No. 20/03
- The Rule Book on the Highest Permitted Levels of Noise In Working and Living Environment- Off. Gazette No. 145/04
- The Rule Book on Conditions to be Fulfilled by Companies which Measure and Forecast Noise In Working and Living Environment - Off. Gazette No. 37/90

### **Waste Management**

- The Law on Waste - Off. Gazette No. 178/04
- Rule Book on Waste Types - Off. Gazette No. 27/96
- List of Authorized Institutions for Publishing Reports on Testing Physical and Chemical Properties of Waste - Off. Gazette No. 51/96,93/96
- Rule Book on Waste Management Requirements - Off. Gazette No. 123/97
- By-law on Hazardous Waste Management - Off. Gazette No. 32/98
- Rule Book on Packaging Waste - Off. Gazette No. 32/98
- By-law on unit fees, corrective coefficients, approximate criteria and measures for setting charges on burdening the environment with waste - Off. Gazette No. 71/04

### **Other Relevant Acts**

- The Law on Fire Protection - Off. Gazette No. 11/91, 58/93
- The Law on Genetically Modified Organisms - Off. Gazette No. 70/05
- The Law on Chemicals – Off. Gazette No. 173/03, 160/04
- The Rule book on Handling Animal Carcass and Waste of Animal Origin and its Destruction - Off. Gazette no. 24/03

## **7.2 ROLES AND RESPONSIBILITIES OF THE AUTHORITIES**

### **MINISTRY OF ENVIRONMENTAL PROTECTION, PHYSICAL PLANNING AND CONSTRUCTION**

Address:

Ulica Republike Austrije 20, Zagreb

Phone: 385 1 3782 444

#### **DIRECTORATE FOR THE ENVIRONMENTAL PROTECTION**

Address:

Avenija grada Vukovara 78 10 000 Zagreb

Phone: 6106-578,

Fax: 6118-388

#### **DIRECTORATE FOR PHYSICAL PLANNING**

Address:

Ulica Republike Austrije 20, 10000 Zagreb

Phone: 01/ 3717-123;

Fax: 01/ 3772-822

#### **DIRECTORATE FOR INSPECTION**

Address:

Vinogradska 25, 10000 Zagreb

Phone : 01/3712-700

Fax: 01/3712-713

#### **DIRECTORATE FOR HOUSING, MUNICIPAL ECONOMY AND CONSTRUCTION**

Address:

Krležin Gvozd 1a, 10000 Zagreb

Phone: 01/ 3783-992

Fax: 01/ 3783-953

The Ministry carries out administrative and other works related to general environmental protection with a high regard toward sustainable development goals. The scope of the Ministry is all work related to physical planning and development, location, construction and operation permits, and zoning and building inspection.

**MINISTRY OF HEALTH AND SOCIAL WELFARE**

Address:

Ksaver 200 a, 10000 Zagreb

Phone: (01) 4607-555, 4677-005, 4677-100, 4677-093

Fax: (01) 4677-091

**DIRECTORATE FOR SANITARY INSPECTION**

Phone: (01) 4677-102, 4607-622

Fax: (01) 4607-631

Ministry of Health and Social Welfare administer sanitary inspection on activities, building structures, premises, facilities and equipment that may have negative influence on human health.

**MINISTRY OF CULTURE**

Address:

Runjaninova ulica br. 2, 10000 Zagreb

Phone: (01) 4866-666

**DEPARTMENT FOR THE PROTECTION OF CULTURAL HERITAGE**

Address:

Runjaninova 2, 10000 Zagreb

Phone: (01) 4866 609

Fax: (01) 4866 680

**DEPARTMENT FOR NATURE PROTECTION**

Address:

Ulica grada Vukovara 78/III, 10000 Zagreb

Phone: (01) 610-6555

Fax: (01) 610-6904

The Ministry of Culture performs administrative and other works related to: research, examination (analysis), updating, noting, documentation and promotion of cultural heritage; central information service; designation of protected cultural values; publishing special conditions of construction with the aim of Cultural heritage protection; cultural heritage inspection works.

**MINISTRY OF THE INTERIOR**

Address:

Savska cesta 39, 10000 Zagreb

Phone: (01) 6122-111

Fax: (01) 6122-771

**DIRECTORATE FOR INSPECTION, FIRE PROTECTION AND CIVIL PROTECTION**

Address:

Ilica 335, 10 000 Zagreb

Phone: (01) 3788-646

Fax: 3788-187

Along administrative works, Ministry of Interior carries out other works related to: road traffic safety, motor vehicle registration; explosives; fire protection.

**MINISTRY OF AGRICULTURE, FORESTRY AND WATER MANAGEMENT**

Address:

Ulica grada Vukovara 78, 10000 Zagreb

Phone: (01) 6106 111

Fax: (01) 6109 201

**DEPARTMENT FOR AGRICULTURAL LAND**

Phone: (01) 6346-234

Fax: (01) 6346-267

**DEPARTMENT OF WATER MANAGEMENT**

Address:

Ulica grada Vukovara 220

Phone: (01) 6307-333

Emergency line: 098-274-905

Ministry of agriculture, forestry and water management administer among others activities related to: protection of agricultural land, transformation of agricultural land to building land, forest and forest-land protection.

Water protection is entirely under the jurisdictions of the Water Management Directorate, which performs administrative, and other works related to water management, water resources and usage.

Under its authority are as well all inspection works on water protection, pollution prevention and water usage. The Directorate is administered through four units among which are: Unit for water management and Inspection Unit.

### **CROATIAN WATERS**

Address:

Ulica grada Vukovara 220

10 000 Zagreb

Phone: 6307-333 (central)

Fax: 01/6151-793

Among others, Croatian Waters activities includes: water protection – control and monitoring of water conditions, enforcement of State Plan for Water Protection, general water management, record keeping, maintenance of integrated water information system, supervision of water related construction works.