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“APAT EXPERIENCES IN DISTANCE LEARNING AND ENVIRONMENTAL EDUCATION THROUGH INTERNET”

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1. Introduction.

Among the complex and delicate relations that concern the environment, in terms of implementation of ethic and virtuous lifecycles for pollution abatement, waste reduction and management, reduction of consumption and deterioration of natural resources, new instruments can help to promote sustainability.

The need to modify styles and methodologies of market based on production and consumption in order to improve eco-efficiency, that means on one side the adoption of new behaviours and innovative technologies and on the other side the growth of new market’s opportunities and borders, could be supported by many initiatives based on different instruments, as for example communicative tools dealing with information, education and training.

New environmental policies and strategies, in fact, together with the launch of new fashions and habits referring to the analysis, appreciations and diffusion of ‘best practices’ could be enlarged by means of innovative instruments as for example remote distance information, education and vocational training for people involved in decision making, but also for citizens interested to change their behaviours with ‘environ-mentality’.

In this attempt this presentation refers some recent efforts and experiences that are promoted by the European Union and are developed, also together with other Partners, by the Italian National Agency for Environmental Protection and Technical Services (APAT) in order to prepare and validate useful supports to the changes that are taking place in markets and in people behaviours and that should be taken into account by decision makers at local level and small and medium enterprises to prepare themselves to manage a renewed request for environmental concerns by means of sustainability.

The term environmental learning traditionally refers to transfer of knowledge to younger generations, however learning should not occur only in specific periods of an individual’s life, but during all human life.

Recently the concepts of permanent education, continuing education, recurrent education and training have been introduced and they are become socially shared concepts.

This means that the adult age it is not any more considered as point of arrival of an individual acknowledgment, but as a moment of continuous development of skill, knowledge and experiences.

Environmental learning needs of specific kinds of learning, based on the principle of the “self-directed learning” as point of self-regulation and self-determination that means a dynamic process development for his environmental awareness and skills.
The environmental learning process has to take into account the skills and competencies already acquired, the personal conditions of the individual and the level of knowledge to reach.

Distance learning contains the concepts and requirements of self-learning and open learning as it is possible access to it without any bond of time and space and should be considered a powerful tool to diffuse environmental information in a systematic way.

“Environmental education” and “environmental learning” are not terms only ascribed to the vocational training courses, in fact, they can also be applied to the activities of exchanging and spreading correct environmental information with the aim to promote more environmental awareness and new patterns of behaviours for European Union citizens.

The distance learning, open to every one, therefore can be considered an innovative instrument also addressed to people involved in decision making processes and for citizens interested to adopt more ecological and sustainable life styles.

Starting from the recent APAT experiences on environmental distance learning model addressed to some specific items such as Local Agenda 21 and Life Cycle Assessment techniques, and with relation to the results showed by the E.U. research Eurobarometer, that has analysed the data from about 7.500 citizens in the 15 Member Countries on the item ‘The sustainable development and the opinions of Europeans on the environment’, the present document support a proposal for some further development at E.U. level for a common tool.
2. The Environmental Distance Learning.

The environmental distance learning is a didactical methodology, based on the disjunction between learner and teacher, in which training materials (papers, audio-visuals, software) can be provided through different channels, such as e-mail, television, Internet or Intranet.

The main objects of the distance learning through Internet is the creation of relationships between participants and knowledge and between participants and professional world with particular attention to the professional community and continuous relationships with the experts.

The attention is therefore focused namely on the communicative relationships with all actors that, at the same time or context, deal with equal arguments.

The distance training is a flexible way of learning, being customised according to the user’s features, easily available and takes into consideration specific characteristics and requirements of the trainees with different needs of deepening, involving only time availability.

The distance vocational training should have three main characteristics:

- the flexibility, in order to permit different specialisation;
- the dynamism because the training context has to be fixed, and at the same time, up to datable in different contexts;
- the organisation in network enlarging the knowledge available on the web, by means of databases on good practices, web sites, lists of URL and e-mail of experts in specific environmental fields.

Therefore a distance training has to consider the features of many users diffused in different Countries for which it is not easy to be involved in frontal training, in a compatible way with their working activities, and in doing so, it is an extraordinary tool to multiply the effort to teach and get information, without material involvement.

Within this general framework the distance training should be based on methodologies and materials that allow the users to attend the courses in self training and asynchronous procedure making the trainees able to attend a learning program without any bond of space and time, guaranteeing the maximum of flexibility in using.

Synchronous activities guided and monitored by a tutor or an expert teacher should also be introduced in order to increase the motivation of trainees and finalise his knowledge.

The synchronous activities are provided to:

- stimulate the matching of different opinions and the co-operation among the trainees;
- verify problems and difficulties in training;
- support and sustain the efforts of the trainees.
The distance learning systems should help the trainees through a first period of a frontal or distance training to manage new instruments of e-learning also autonomously, with the assistance of a multimedia distance tutor.

The distance training, in fact, has to consider the trainee as an active subject for the definition of his own training course, making able the user:

- to verify his own level of knowledge;
- to define his own training objectives;
- to acknowledge the possible course to reach such objectives;
- to verify the level of knowledge acquired.

A key professional figure in the distance training processes is the tutor on-line which has the task to develop operatively the didactic module of the course, to guarantee the quality of the formative course, to motivate the trainees and to support him from a contents and methodological point of view.

Considering the specific features of the distance learning the courses have to be structured taking into consideration the different knowledge and needs of the users. Therefore the courses should be characterised by:

- the possibility to customise courses on the bases of the different level of knowledge of trainees;
- the possibility to personalise the courses related to the modularity of the training, allowing the users to get over the modules of which the formative contents are already known;
- the availability of modules constituted by homogeneous and self-standing arguments in order to define different didactic courses putting together different Training Units.
3. APAT experiences on Environmental Distance Learning.

3.1 The Project ‘Skills and competencies for local Agenda 21’.

The Project entitled ‘Skills and competencies for local Agenda 21’, sponsored by the European Union through the ‘Leonardo da Vinci’ Programme is one of the recent efforts to develop a vocational distance training model in which are involved APAT together with other European Partners, as Istituto per il Lavoro of Bologna (who is the coordinator), the Wupperthal Institute of Germany, the University of Naples Faculty of Architecture, the Catholic University of Eichstatt, the Lanza Foundation, the Goteborg University, the Cataluna University (CPSV) of Barcelona and the Laboratorio delle Idee of Ancona.

The main goals of the project, that was started in December 2001 and that will be performed at the end of 2003, are:

- to define a state of the art of the international, European and national strategic addresses for the local Agenda 21;
- to perform a survey in the different European Countries to evaluate the experiences directly carried out by the different actors involved in Local Agenda 21 processes and the training requirements, expressed by the interviewed stakeholders, to acquire the skills and the necessary competencies to manage local sustainable processes strictly related with the aspects of “environment and work”;
- finally, to finalise a remote distance vocational training model prototype, in order to train managers and experts capable to start and manage local Agenda 21, facing the relationship between sustainable development and labour.

The aim of this distance vocational training model is to take into account the specific features and needs of local public Administrators diffused on the European Union territory. Therefore the model structures has been designed in order to deal with the needs of a wide group of users in terms of deepening, involving and time availability while the contents presentation is aimed to be attractive and useful.

Therefore in developing vocational training model different and operative related aspects of work and environment have been deepened, following a general scheme organised in seven Training Modules regarding the fields of competencies, that contain the Training Units of the distance training model (DTM). The fields of competencies deal with the different aspects of sustainable development:

a) the policy orientations and strategies promoted by the international Organisms, the European Community and the national Governs dealing with environmental issues and strategic
sectors, promoting voluntary and legally binding instruments;
b) the governance principles as promoted at international level and their strategic approach to improve democratic participation, public awareness and to allow the governance implementation at local level;
c) the integration of work and environment in local and regional policies, introducing the concepts of structural changes, innovation and sustainable work, integration of environmental aspects into the sectoral policies, improvement of the quality of work and employees participation, and also, the individuation and definition of specific economic instrument to carry out inter-sectoral integration.
d) the ethical approaches about the environmental protection, human right and work;
e) the urban ecology and ecosystems approach, their strategies and the instruments’ implementation in the urban framework;
f) the introduction to the concepts of built-up environments including also the cultural heritage and the application of the integrated conservation strategies and approaches in different local built-up environments;
g) the introduction to the integrated evaluation concepts and theory widening this approach as strategy for urban planning and conservation of cultural heritage end considering it as instrument to support participatory decision making processes, planning and projecting.

In order to prepare the contents of each module, some surveys have been carried out to demonstrate that the specific professional figures operating within the Agenda 21 activities have definite training needs and also start from different kind of knowledge. The partners of the project decided to develop the vocational training model subdividing the Training Modules on the basis of the three levels of knowledge in order to give to the trainees various possibilities of widening suggested arguments:

- the basic level, that explains the general context of different problem fields;
- the strategic level, that suggests the strategies to approach the environmental, social and economic issues describing the targets and orientations of actions for problem solving;
- the instrumental level, that introduces the existing tools that local Authorities can apply to start up a sustainable process management. In the Figure 1 are summarised the competencies fields and their organisation on the basis of the different typologies of knowledge.

The technical organisation of the vocational training model is schematised in Figure 2.

All the works performed by the Partners as documents and reports are contained on the web site of
the Project at the URL www.ambiente-lavoro.com that has been developed to publish the results found and the issues related.

3.2 Contents of schedules developed in the Project ‘Skills and competencies’.

Among the preliminary results and recent running developments of specific parts of a distance training model for local Authorities, and namely for decision makers responsible of the management of land planning participated design, the Project has highlighted some important matters related to sustainability tools that have been developed.

The first Training Unit (basic) of the Training Module, that concerns the ‘Policy orientations on sustainable development’, introduces to the main sustainable development concepts, describing the rise and the spreading of the debate on the real possibility for societies to grow without compromising the common natural heritage and carrying out equity distribution of world’s resources among populations and different generations, as affirmed during the United Nations Conference on Environment and Development, held in 1992 in Rio de Janeiro.

The document Agenda 21, issued during such Conference, underlines the need to consider the relationships between environment, economy and society to solve the problems of disparity among Nations, poverty and deterioration of the natural environment and also assigns to the local Authorities a central role in carrying out a sustainable and shared land planning design.

All these themes and principles have been recently reaffirmed during the World Summit of Johannesburg 2002 in which new cooperation tools and a Plan of implementation of sustainability principles were promoted.

The vocational training model deals with such issues also from a strategic point of view in the second Training Unit (strategic) deepening the documents of Agenda 21 and the Action plan of Johannesburg, together with the European Union ones and particularly with the Sixth Action Programmes for the environment 2001-2010.

The main environmental quality objectives for the next years are highlighted in the fields of air, water, waste and natural resources.

For every environmental issue the critical state is described and are also explained the strategies and the approaching instruments that should be applied at different Govern levels to implement sustainable development processes.

The promoted strategies are based on the respect of existing environmental laws, voluntary actions, involving citizens to share responsibilities, integration of environmental aspects into sectoral policies which are considered as fundamental pre-requisites to reach environmental protection together with social and economic growth. These indications are acknowledged also into the
National environmental strategies for sustainable development, as for example the Italian one. Therefore the third Training Unit (instrumental) proposes a more operative point of view of the policy orientations on sustainable development, introducing the accomplishment aspects of the different and specific instruments already existing that the local Authorities can apply in order to reach specific objectives of sustainability and namely:

- the mechanisms of local acknowledge of the Community measures based on an high level of environmental protection;
- the definition of a sustainable land planning agreed by local Authorities and all stakeholders such as local Agenda 21 process;
- the use of support instruments such as guidelines for Agenda 21 implementation and best practices data base that facilitate the exchange of experiences;
- the choice, application and interpretation of indicators as descriptive instruments of the status and of the performances towards sustainability;
- the financial measures such as environmental taxes and fund programmes;
- the voluntary instruments that promote the engagement of private sectors to achieve a better environmental performance;
- the local Negotiated Planning finalised at creation of territorial partnerships to support employment and environmental protection.

In the first Training Unit (strategic) of the Training Module ‘The socio-economic dimension of sustainability’ the APAT contribution proposes a strategic lecture of the “integration principle” that brings environmental protection and sustainability considerations into all sectoral policies. The main productive activities such as agriculture, industry, infrastructure, transport, energy and tourism, generate relevant impacts on the environment and the adopted production models are analysed in order to highlight the possibilities to implement more ecological production processes. In this sense the second and third Training Unit (instrumental) suggest to the trainees a widening of the operative instruments for integration, by means of:

1. the binding tools linked to the Community rules and dispositions, such as: laws and regulations to transform environmental policies into action, environmental taxes in application of the “polluter pays” principle and the Environmental Impact Assessment (EIA) procedures to monitor the possible impact of projects on environment;
2. the voluntary tools to develop a dialogue between institutions and industry in order to readdress the existing production and consumption patterns such as instruments to promote green production (EMAS, Eco-label, Environmental Product Declaration, Life Cycle Assessment) and instruments to promote a green market (Green Public Procurement).
In this section, also other instruments are explained to the trainees, considered useful to join together the social and economic targets with the environmental protection such as:

1. the land planning, in order to develop the economic capabilities of the territories, conserving natural resources and cultural heritage;
2. the use of indicators to monitor the progress towards integration;
3. the education and communication instruments to enhance environmental awareness to promote sustainable behaviours and green consumption.

Another application that could lead to possible opportunities of work in the environmental protection field is related to occupational safety, that promotes new standards and new professional figures with profiles according to recent legislation at European Union level and adopted at national level.

The figure 3 summarises the competencies fields developed by APAT.
3.3 The Project “Cooperation and Standard for Life Cycle Assessment Data in Europe (CASCADE).

A second activity in which APAT is involved in order to develop a distance vocational training is the CASCADE project, promoted by the European Union within the “Competitive and Sustainable Growth Programme”.

The Partnership of the projects is composed by national Agencies, researche industries, LCA software developer and databases providers of seven European Countries such as: 2.0 LCA Consultants (DK), Caesar Systems Limited (UK), Chalmers University of Technology (S); Ecobilan Sa (I); Environmental Agency (UK); Ferroday Limited (UK); Posc/ Caesar Association (NO); Prè Consultants BV (NL); Rolls- Royce PLC (UK); ISML SPA (I); IFEU (D).

CASCADE is a thematic network to establish the necessary standards for Life Cycle Assessment Data and to create an initial Reference Data Base. The main objective is to achieve accessibility, comparability and quality assurance of data related to the environmental properties of materials and processes of which any products is made and the integration of the Life Cycle Assessment in the design process.

The users, especially those coming from Small and Medium Enterprises (SMEs), however, find the use of standards for product data and Life Cycle Assessment (LCA) too complicate. Therefore there is the need of an European initiative to train people to use existing standards for data representation and exchange and so the project proposes, among the others, activities:

- to facilitate the exchange and dissemination of knowledge among LCA Community, product designers and experts on computerised representation of material, products and process data, using international standards and contributing to their definition;

- to train practitioners and software developers on the use of the standards LCA and to train product designers on LCA.

The aim of the distance vocational training model for the Life Cycle Assessment techniques, that will be still developed, is the sharing of knowledge and exchange materials on LCA with particular attention to the aspects of LCA usage of data and formats based on STEP model, data dictionary relevant to LCA recording and re-use of LCA data of products and quality assessment of LCA data.

The LCA training distance courses are addressed to different operators of the productive processes:

- LCA newcomers;
- LCA Practitioners;
- LCA software developers;
- Product designers.
The Project’s phase finalised to the development of the training packages for the distance learning is still in progress. APAT, therefore, has proposed to the others Partners a preliminary and indicative list (to be furthermore increased and developed) of the main aspects related to the production of sustainable products to define an example of possible arguments to work out a preliminary scheme of a distance training model about the LCA techniques.

The argument list proposed deals both from a theoretical and instrumental approach to support the planning production practice. It is also an indicative consideration related to the necessary knowledge to use and manage the reference LCA Data Base.

The proposed list identifies a learning process defining some macro-areas of knowledge, related to sustainable production systems, specified by different competencies fields that deal with the theoretical and practical aspects of the Life Cycle Assessment and LCA Data Base. Those fields of competencies are further subdivided in specific arguments (figure 4).

The macro-areas and the field of competencies proposed are the follows:

- A reference framework: an introduction to the themes of the environmental, social and economic aspects of sustainability;
- The projecting and developing sustainable products: a theoretical and technical approach that deals with the production processes and the life cycle of products with attention to the aspects of long life design for products and materials, sustainable use of resources and economic aspects related;
- The methods and analysis instrument, assessment and development of sustainable products: an introduction to the strategies and support instrument to develop environmental sustainable products and to evaluate environmental impact assessment of production processes and products;
- The implementation and use of a Reference data base for LCA: description and definition of reference data for LCA and professional techniques to access and use LCA data bases.

### 3.4 Necessary requirements for a distance training for LCA

The vocational training model should allow all LCA users to employ in a rigorous way LCA techniques in a short time and to access to and manage the reference data base for LCA.

The training model scheme for LCA users can foreseen different base functions such as:
• Introduction and familiarisation to the distance training course in order to introduce users in the distance-learning platform;

• Users identification in order to define the user’s role and the professional figure to which training is related;

• Design of a customised training course for each professional figure with the tutor’s help;

• Evaluation by tests of the level of knowledge reached;

• Training interactive tools such as links to web sites, best practices, class forum, electronic blackboard, etc.

The remote distance training model proposed is characterised by a modular structure organised into 4 courses modules each of them for 1 professional figure. Every module is conceptually self-standing and is subdivided into Training Units and any Training Unit is constituted by specific learning objects, following a general scheme of organization of the training modules.
4. Current state of the art of the environmental distance learning.

The Service for the Promotion of Environmental Capacity Building, during this year, has activated a stage of preliminary research, that is still running, to match and deepen the aspects related to the environmental distance learning, trying to enhance past and present experiences in this field and to highlight the main characteristic of the existing environmental distance training systems.

The main objective of this study is the carrying out of a broad survey on the state of the art of the existing environmental distance learning programmes, promoted by the most important Organisations and Universities at International, European and National level, following predetermined formats. This study is not yet finished and is based on a preliminary analysis of the websites.

The presence on Internet of different vocational training courses related to the aspects of environmental management and protection and sustainability, in fact, has been verified and explored with the support of the information at the moment available describing, in a synthetic table, the main characteristics of these courses (figure 5).

For example in the case of the Global Virtual University (GVU) the fields are filled as showed in figure 6.
5. Proposal for an environmental distance learning System project for informational at European Union level.

The experiences presented deal with some aspects specialist aspects of international orientations on sustainable development, socio-economic relations between environment and work, strategic tools for green production including education, and they are an example to start some proactive reflections on the importance of the contents of these kind of instruments for sustainability.

In fact, it seems important for any Country, to achieve from the international network the needed assistance and guidance – that is through the knowledge management and right applicative examples too – during its own approach towards new sustainable levels of development, production, marketing, trade and consumption.

A distance learning module on environmental general information for European Union citizens and technicians, could be proposed, containing references on all environmental concerns, available for correct answers to the large public on the main topics of interest.

This distance learning system could be a central point for communication and knowledge exchanges, directed towards the enhancement of the different competencies and skills of each Partner.

At the moment, after the above mentioned experiences, the APAT Service for the Promotion of Environmental Capacity Building is performing an evaluation study for a remote distance vocational learning model on environmental protection matters, in order to finalise a feasibility study for a proposal of a remote distance vocational training package, designed also for information purposes, to developed also within a network of other European Union Partners.
6. Conclusions.

From the past experiences in distance learning and environmental education through Internet that are underlined in this document, some useful considerations and suggestions come out.

There is a need of environmental information tools that can spread information and also references, best practices and available data on the most requested environmental protection and sustainable development arguments useful for citizens that want to be learned on these subjects.

There is probably not an homogeneous approach towards the adoption, management and usage of information tools as remote distance vocational training models, and a consistent work has been done in this direction, also by means of European Union projects, but especially by the others.

The coordination and use of different skills and competencies coming from different Partners with their specific capabilities in environmental fields, can assure the quick covering of different specialist arguments, giving the necessary assurance of completeness and availability of the required know-how for a comprehensive distance learning vocational learning model.

This could be an interesting field to test, trying to converge towards some proposals that, starting from the results of the surveys already done – as for example the research so-called ‘Eurobarometer’ - could highlight past experiences and promote some common positions that could adequately cover expectancies from people for a correct and useful environmental information.

A first attempt for a proposal could be the launch of a dedicated project, whose primary activity could be a survey of what is running on Internet as remote distance vocational learning systems on environmental items, trying to evaluate different approaches and to stimulate a common position on related problems.

For example in Annex 1, there is a proposal for a project to be presented to the 6^ European Union Action Plan entitled ‘Environment and health awareness learning’, concerning the possible activities necessary to prepare a useful learning tool to spread correct and deepened information on the environment and health topics.
7. Figures.

Figure 1

| ‘Skills and competencies for local Agenda 21’ |
|-----------------|-----------------|
| TRAINING MODULES | TRAINING UNITS |
| **Type of knowledge** | **Keywords** |
| **A) Policy orientations on sustainable development** | 
| Basic | International orientations and policies |
| Strategic | Strategies, action areas and sectors |
| Instrumental | Instruments |
| **B) Democratic governance** | 
| Basic | Governance concept within the framework of Sustainable Development |
| Strategic | Improving democratic participation and public consciousness |
| Instrumental | Operational Aspects of the Governance Model |
| **C) The integration of work and environment in local and regional policies** | 
| Basic | Work-related problems and changes due to globalisation, structural changes, innovation processes and flexi-time-strategies Grounding a common viewpoint on sustainable work |
| Strategic | Integrated strategies: looking at barriers and synergetic potentials in different action fields Improving the quality of work Improving the participation of employees |
| Instrumental | Integration of environment aspects into the policies An economy based on eco-efficient products and services Local and regional action fields, applied instruments of local labour policy, best practices |
| **D) Ethic in Sustainable Development** | 
| Basic | Environmental justice in and between generations Risk and potentialities of the technological development New models of wealth Human rights |
| Strategic | Environmental ethics Ethics for a global society Ethics of work Responsibility principle |
| Instrumental | Instruments |
| **E) Urban Sustainable development** | 
| Basic | Urban sustainable development concept |
| Strategic | Objectives and strategies |
| Instrumental | Applied instruments |
| **F) Integrated Conservation of Cultural Heritage** | 
| Basic | Concepts related to Integrated Conservation of built-up environments including Cultural Heritage |
| Strategic | Application of Integrated Conservation strategies and approaches in different kinds of built-up environments including cultural heritage |
| **G) Integrated evaluations for urban planning and conservation of cultural heritage** | 
| Basic | Integrated evaluations: theory |
| Strategic | Integrated evaluations: approaches |
| Instrumental | Implementing integrated conservation strategies |
Introduction to the training course and familiarisation to the DTM (on site or distance training)

User identification
- role and professional figure within the local Authorities
- assignment to a virtual class and Tutor

Skill balance

Design of a customised training course with the help of the Tutor

Training Modules A-G

Learning Units Base: 1, 2, 3, … 8

Learning Units Strategic: 1, 2, 3, … 10

Learning Units Instrumental: 1, 2, 3, … 8

Learning Unit scheme
Synthesis of Learning Units
Test access self evaluation
Full texts Learning Objects 1,..94
Power Point presentation
Key words
Case studies and best practices
Complementary texts
Exercises
Interactions of training courses
Final Tests

Self evaluation
Tutor Evaluation
<table>
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<tr>
<th>TRAINING MODULES</th>
<th>Type of knowledge</th>
<th>Keywords</th>
<th>Learning Objects</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Policy orientations on sustainable development</td>
<td>Basic</td>
<td>International orientations and policies</td>
<td>The main environmental issues (environment and biodiversity; air, water, waste, natural resources) in international and European Policy.</td>
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<td></td>
<td>Strategic</td>
<td>Strategies, action areas and sectors</td>
<td>Agenda 21; Johannesburg Summit; European Strategy for SD; VI European Action Programmes; National Strategy and Action Plan for SD; Global Agreements (Climate Change; Biodiversity; Desertification); International Agreements (Aarhus Convention, Aalborg, Hannover, Lisbon)</td>
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<td></td>
<td>Instrumental</td>
<td>Instruments</td>
<td>Legal instruments (European, national and local environmental law) Local Agenda 21; Economic instruments: Programmes (Structural Funds, Habitat, Life); Voluntary agreements; Analysis instruments: Sustainability Indicators (UNEP, OCSE, ECI, Ecological Footprint); Guidelines (ICLEI, APAT); Best Practices (GELSO/APAT)</td>
</tr>
<tr>
<td>C) The integration of the work and environment in local and regional policies</td>
<td>Strategic</td>
<td>Integration of environmental aspects into the policies</td>
<td>The main objectives of European and National policies (for example Italian and German national policies) and Global Agreements for integration of environmental considerations into following productive sectoral policies: Agriculture Industry Infrastructure Transport Energy Tourism Occupational safety</td>
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<td></td>
<td>Instrumental</td>
<td>Integration of environmental aspects into policies</td>
<td>Integration of environmental aspects into the sectoral policies at the local level of implementation: legal instruments. Approaches and instruments towards integration: regulatory, fiscal and assessment measures. Criteria and methods for judging progress towards integration.</td>
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## “Cooperation and Standard for Life Cycle Assessment Data in Europe” (CASCADE)

### The reference framework

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<th>Environmental, social and economic aspects of sustainability</th>
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<td>Environmental impact of our production and consumption system</td>
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<td>Sustainable society</td>
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### Projecting and developing sustainable products

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<tr>
<td>Sustainable resource use</td>
<td>Minimising resource use</td>
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<td>Choice resources and productive processes with a low environmental impact</td>
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<td>Design long life for products and materials</td>
<td>Optimisation of product life</td>
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<td>Extension of material life</td>
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<td>Economic aspects</td>
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### Methods and analysis instrument, assessment and development of sustainable products

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<td>Instruments for products environmental impact assessment and for developing sustainable products</td>
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### Implementation and use of a Reference data base for LCA

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<th>Reference data base</th>
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| Global Virtual University (GVU) | Global Environment and Development Studies” (GEDS) | http://www.gvu.unu.edu/coursedes.cfm | - Environment Information Management  
- Development Management (DM);  
- Fresh Water Management (FWM);  
- Marine Resource Management (MRM);  
- Land Use Management (LUM);  
- Health and Environmental Management (HEM). | graduated degree | - 4 six-month period  
- 6 specializations  
- self evaluation test  
- tutoring  
- chat/forum/e-mail | - tutoring  
- chat/forum/e-mail  
- self evaluation test  
- tutoring  
- chat/forum/e-mail |
Title of project: ‘ENVIRONMENT AND HEALTH AWARENESS LEARNING’

2.1 Summary description of the project for which the subsidy is requested, please indicate:

The project aim is the diffusion of information to raise citizens awareness on the problems of illness and diseases caused by environmental pollution in urban areas, with particular attention to the children, that are more vulnerable.

The project wants to give a wider and correct information to citizens on the specific impacts of environmental pollution on human health. In fact the exposure to different and complex kind of pollutants that are present in air, water, food, consume products and buildings enhance the risk of rising of asthma, allergies, some types of cancer, neo-toxicity and immune suppression.

Therefore the project will spread deepened information on the specific environmental pollutions that can affect the human health, especially the children’s one.

The main topic that will be dealt with:

- air pollution, especially the particulate matter, caused by transport;
- the persistent presence of the chemicals in environment and food
- the presence of pollutants in drinking water, rivers, lakes, and sea.

The project wants, moreover, to inform citizens on the measures adopted by the European Union to deal with each specific environmental pollution problem.

These information will be made easily available for citizens through different instruments.

The principal tool proposed for this project is an on-line distance learning, that is a flexible way to diffuse correct information to citizens, who want to increase their awareness on health and environment topics, according to their time availability and everywhere. The on-line learning could be developed in educational units, one for each argument dealt with, subdivided in different levels of deepening of knowledge.

The other instruments foreseen for the project are the follows:

- CD-ROMs that contain the training courses of the on-line distance learning;
- Brochures, that summarise the contents of the project and give information about the modality to access to complete and deepened information trough the on-line distance courses, diffused at local level for example trough schools;
- National workshops in each Country of Partnership with the participation of EU Accession Countries representatives in order to involve these Countries on the diffusion of awareness about the relationship between environmental pollution and human health.

- General objectives to be reached and their link(s) to the present call

The objective pursued by this project is the enhancing of citizens awareness on the relationships existing between environment pollution and some kind of illness. The project wants to make available for the European citizens and for citizens of the EU Accession Countries, correct information on the quality of the environment and its reflection on the quality of life, highlighting the existing possibility to improve the environmental quality through the adoption of more ecological behaviours and life styles.

In this sense the project has the objective to demonstrate that citizens can contribute to solve environmental problems, introducing them to sustainable development concepts and promoting sustainable practical actions.

The first output of the project is the realisation of a on-line distance courses that offers to citizens the possibility to increase their awareness on environment and health concerns. The information, that will be provided in the on-line course, will be easily available and comprehensible also by children as organised in different level of knowledge and therefore will be foreseen an elementary level of information. Young people will be also involved in the activities that, eventually, will be performed in schools to diffuse the informative brochures.

The second output of the project is the possibility to involve citizens of EU Access Countries, through the on-line distance courses in a process of awareness rising and also of training on the specific concerns of environment and human health, moreover, giving them useful indication on the European Union actions on the topics.

Others outputs of this project are the further tool that will be developed to make more available information such as CD Rom that could be useful especially in the cases of impossibility to use Internet.

The last output of the project will be the National Conference, that will take place in each one of the
five Partnership Countries, in order to give a National interest to the initiative.

- **In case of partnership, clear description of the tasks to be performed by each participant (who is doing what?)**

  Italy: definition of the on-line distance learning; contribution to the development of some environmental items (to be defined); supply of environmental data; brochures; national workshop; contribution to the preparation of the Cd-rom.

  Other Partners: contributions to be defined.

- **Place(s) of execution of the project:**

  Italy, other Countries Partners
2.2 Results expected from the project for which the subsidy is requested (please indicate the measurable elements through which the impact of the subsidy can be evaluated in relation to the defined general objectives. The target-group and methodology to be employed, in addition to the final product that the applicant intends to deliver to the Commission on completion of the project.)

The foreseen measurable results are the follows:

1. The realization of the contents of the on-line distance learning, organised in three different topics:
   - air pollution, especially the particulate matter, caused by transport;
   - the persistent presence of the chemicals, in particular pesticides, on environment and food
   - the presence of pollutants in drinking water, rivers, lakes, and sea.

2. The creation of the on-line distance course

3. The production of CD ROMs and of brochures

4. The organisation of National workshops in each Country of the Partnership

5. The organization of a final seminar for the presentation of the tools

The foreseen target are all EU citizens, also the younger, and the citizens of the EU Access Countries

The principal methodology that will be applied is the distance learning techniques

The final products deliverables are:

1. The full texts of the on-line learning
2. The presentation of the on-line distance learning web site
3. The CD-ROM and Brochures
4. The proceeding of the National workshops

2.3. Summary schedule of the project for which the subsidy is requested.
Starting date of action/project: January 2004

Date of completion of project: December 2004

Number of months necessary to complete the action/project: 12 months

Other information relevant to the schedule of the project and an indication of critical events for the successful implementation of the project, and where these might fall during the project period:

To be defined