

“Capacity Building and Strengthening Institutional Arrangement”

“Capacity Building for EEAA Training Departments”
(Advanced)

New Technologies in Training

APAT Experiences

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APAT

Agency for Environmental Protection and Technical Services



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1. APAT E-Learning System

APAT has participated into two European Projects which are examples of the recent efforts, carried out at European level, to develop and to diffuse useful training courses through e-learning, to support changes taking place in markets and people behaviours, that should be taken into account at national and local level for a more suitable environmental management

✓ The project “Skills and competencies for local Agenda 21”, within the E. U. Leonardo da Vinci programme

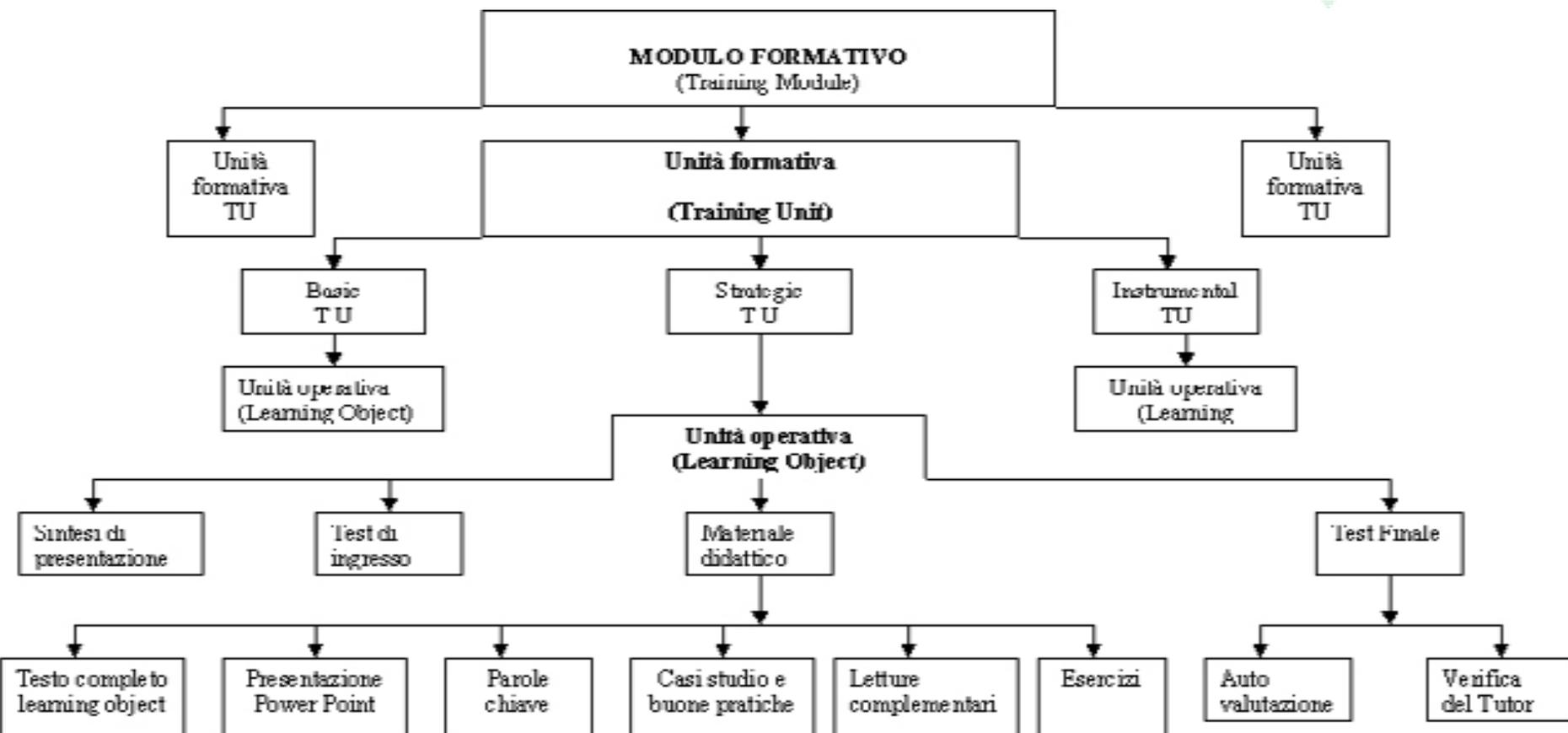


✓ The project “Cooperation and Standard for Life Cycle Assessment” (CASCADE) within the E.U. “Competitive and sustainable growth programme”.



1. APAT E-Learning System

Organization of scientific and technical contents



1. APAT E-Learning System



Development scheme of training modules and units

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	Integration of environmental aspect into the policies Integrated strategies: looking at barriers and synergetic potentials in different action fields Improving the quality of work Improving the participation of employees
		Integration of environment aspects into the policies
	Instrumental	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 betw een 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

1. APAT E-Learning System



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Login

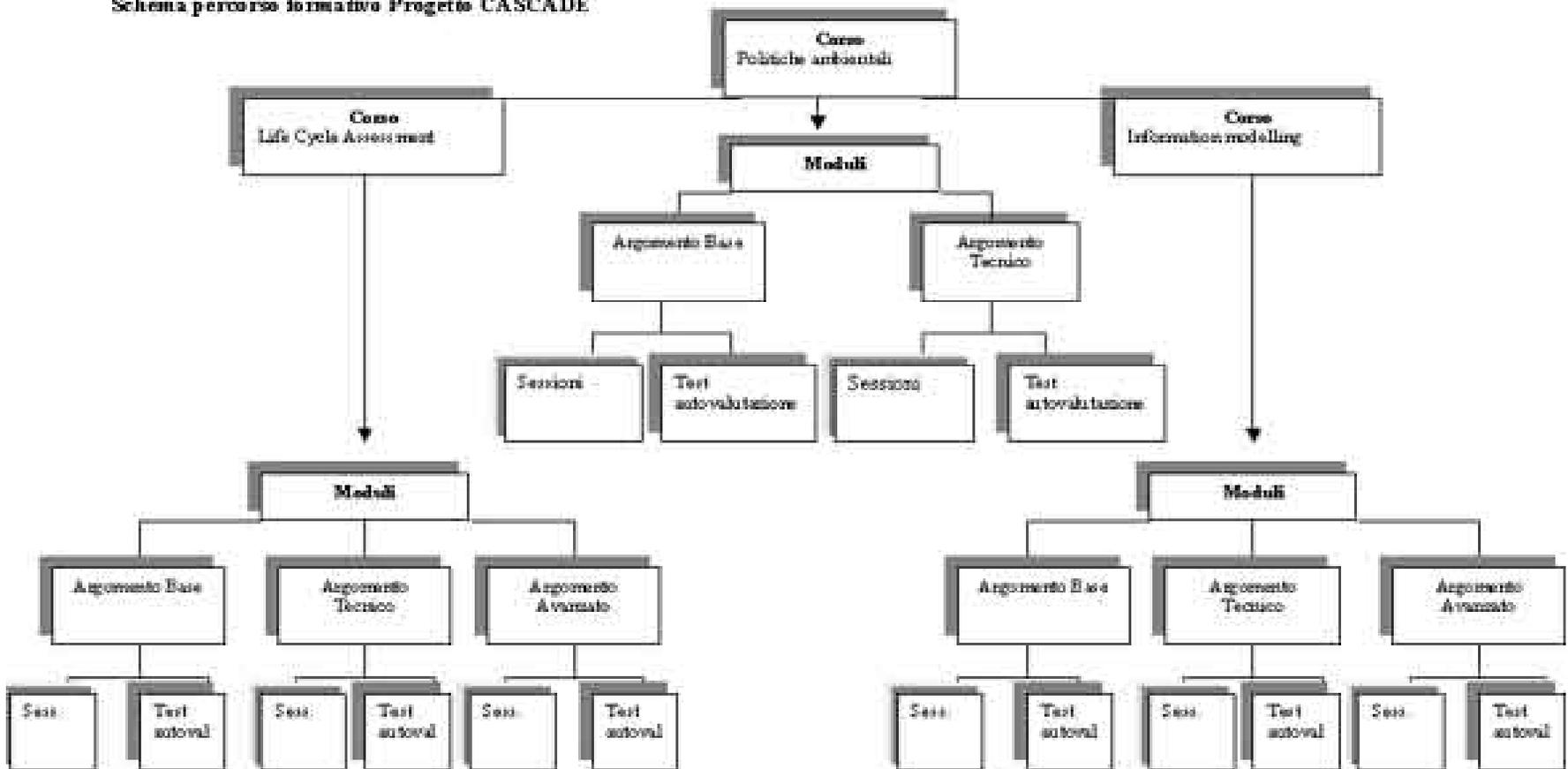
Reset

1. APAT E-Learning System



Organization of scientific and technical contents

Schema percorso formativo Progetto CASCADE



1. APAT E-Learning System



LCA tool for SME: First steps...





The Commission of the European Communities says in its Green Paper on Integrated Product Policy:

"... tools should be developed and made available which allow a fast check of the environmental impacts of products, in particular for those actors such as small and medium-sized enterprises who do not dispose of the expertise and resources to conduct life cycle analyses themselves ..."

So this is the reason why we are here! Let's do the first steps to get to know the eVerdee tool!



The main goal of this Argument of the course is to offer a general overview about the eVerdee tool:

- Product designers, purchasers and environmental strategists can obtain a basic background knowledge about the tool which is essential for the understanding and interpretation of eVerdee data and final results;
- LCA practitioners receive a first introduction into the tool before starting with more detailed and technical descriptions. They'll know where we start from and where we want to arrive.

1. APAT E-Learning System

Evaluation study for APAT E-learning System

APAT has also performed a feasibility evaluation study for an environmental learning system, designed to promote specific skills and scientific and technical competencies and also to answer to the continuous needs of knowledge on the field of environmental protection.

This evaluation study has foreseen two main areas:

- ✓ Definition of the general structure of the E-Learning System
- ✓ Definition of training contents organization

<p>APAT Agenzia per la Protezione dell' Ambiente e per i Servizi Tecnici Servizio Promozione della Formazione Ambientale</p> <p>Studio di Fattibilità <u>Progetto Formazione Ambientale a Distanza APAT</u></p>	
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1. APAT E-Learning System

Definition of the general structure of the E-Learning System includes the following main aspects:

- ❖ General training objectives: vocational and divulgative e-learning
- ❖ Target: experts facing environmental problem (vocational) and large public (divulgative)
- ❖ General structure of e-learning system:
 - ✓ virtual secretary for trainees
 - ✓ system of authoring contents (vocational and divulgative)
 - ✓ tutoring tools
 - ✓ virtual desktop
- ❖ Analysis of hardware requirements: server characteristics and PC characteristics for developers and users
- ❖ Analysis of software requirements: applicative software for developers and users
- ❖ Cost forecast for project development
- ❖ Time requirements for project development

Back office

Front office

1. APAT E-Learning System

For the training contents organisation have been developed the main following steps:

❖ General organisation of training contents: subdivision in

✓ training modules

✓ training units

❖ Definition of didactical tools:

✓ download of documents

✓ bibliography

✓ glossary

✓ links to web site of interest

❖ Definition of community tools:

✓ news

✓ e-mail contacts

✓ thematic forum

1. APAT E-Learning System

A prototype version of the Environmental e-learning system of APAT has been developed since 2004 to support frontal environmental training courses carried out, adopting the **'blended learning' methodology** which joins training activities carried out in presence with on-line didactical activities.

An example of this prototype version is described in the following slides.

At the moment we are working to implement the main back office functions such as the **virtual trainees secretary** for registration and control of the access to the different training services, and also to implement the authoring system for the development of training modules and tutoring tools to monitor trainees training activities.

This e-learning system will be available through the internet pages dedicated to the activities of “Environmental Education and Capacity Building” Service

1. APAT E-Learning System



The screenshot displays a web-based presentation interface. On the left, there is a vertical navigation menu with green buttons labeled 'Didattica', 'Strumenti', 'News', and 'Contatti'. The main content area shows a slide with the following text:

APAT Corso-Laboratorio di Educazione Ambientale **Gruppo di Lavoro C.I.F.E.**
L'Educazione Ambientale per lo Sviluppo Sostenibile

'Dall'educazione Ambientale all'educazione Ambientale per lo Sviluppo Sostenibile: strategie, strumenti e nuovi approcci'

Ing. Gaetano Battistella
Dirigente del Servizio 'Promozione della Formazione Ambientale' - APAT
Coordinatore del Gruppo C.I.F.E.

At the bottom of the slide, it reads: **Gaetano Battistella - APAT**

1. APAT E-Learning System

The on-line training courses, developed up today, are available through the internet site of APAT:



“Conservation of the biodiversity in the renaturalization and environmental restore”



“Genetically Modified Organisms”



“Geostatistics applied to the environmental problems”



“Polluter transportation in ground and underground”



“Experts in analysis and evaluation in environmental impact assessment”



Working Group Course on Education for Sustainable Development



“Ecodesign, methodologies and tool for innovation and improvement of productive cycles”

2. APAT Computer aids and news software codes

SPSS

APAT in order to evaluate environmental awareness towards public opinion, has performed in 2004 a survey about “Representation of Public Environmental institutions by citizens”

More than 1000 people have been interviewed about environmental awareness issues and with the software codes SPSS it has been possible to collect, analyse and represent all the information (more than 50.000 records) given by interviewed people

In order to manage a lot of information in a data-base, usually all the data have been inserted before in a Excel data-base, and then exported in a SPSS software code, such as the following figures shows

2. APAT Computer aids and news software codes

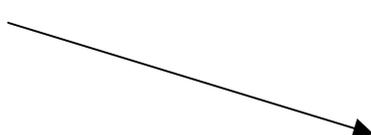
1) The questionnaire that APAT used for the survey was composed by 34 questions.

2) All the answers of people interviewed were collected in excel data-base

General data										Interest of the citizens on the environmental issues																		
number of interview	regioni	age	sex	education	occupation	d1a) inquinamta	d1b) istruzioni(p. 1-5)	d1c) sanita(p. 1-5)	d1d) qualitaz(p. 1-5)	d1e) ambiente(p. 1-5)	d1f) sicurezza(p. 1-5)	d1g) presidenza(p. 1-5)	d1h) cultura(p. 1-5)	d1i) ricerca(p. 1-5)	d2) letto pubblicaz?	d3) segui. vicende amazion?	d4) SES, come trattavano	d5) interesse verso probl. Ecologici? (una sola risposta)	d6a) iniziative amb. di assoc non gov. (p. 1-5)	d6b) Govern. (p. 1-5)	d6c) MATT (p. 1-5)	d6d) Altre org naz. o intern	d7) questione an	d8) ha mai visto programmi tv amb?	d9) SE SI, gradim. Documenti naturaliz	d9 b) degli speciali su. principali probl. amb.	d9 c) iniz. Ass. ecol	
1	1	36	2	3	6	4	4	4	3	4	4	3	3	3	2	2		4	4	4	4	1	1	1	2	1	1	
2	1	69	2	1	1	5	5	5	5	5	5	4	5	5	2	2		4	0	0	0	0	5	1	1	1	1	
3	1	51	2	1	1	4	5	6	5	4	5	5	4	4	2	1	1	1	1	2	3	3	4	1	2	1	0	
4	1	62	1	2	7	6	6	6	6	6	6	6	6	4	1	1		1	1	2	2	3	3	1	1	1	1	
5	1	28	1	3	3	4	4	5	5	5	3	4	5	2	2	1		1	4	5	2	2	3	0	2			
6	1	24	2	3	3	2	5	5	5	5	4	4	5	5	1	2		1	5	3	3	0	7	1	2	0	0	
7	1	34	2	3	2	4	5	6	6	6	6	4	6	5	1	2		4	0	0	0	0	1	1	1	0	1	
8	1	44	1	4	6	2	5	5	5	5	5	4	5	5	1	1		4	4	0	0	3	3	1	1	2	2	
9	1	50	2	3	6	3	4	5	5	5	3	5	4	4	2	2		1	0	0	0	0	1	2				
10	1	31	1	2	6	5	5	5	3	5	3	3	4	4	1	2		4	5	5	5	5	1	1	2	1	1	
11	1	77	1	2	7	4	3	2	3	3	4	4	3	3	5	1	1		1	0	0	0	2	1	2	1	1	
12	1	26	2	4	6	4	5	4	3	4	4	4	3	3	6	1	1		5	4	2	3	3	2	1	2	1	
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14	1	63	1	2	7	3	4	4	2	3	3	5	3	3	2	2		1	0	1	1	2	1	1	2	1	1	
15	1	01	1	1	7	4	4	5	5	3	3	5	2	2	2	2		1	0	0	0	0	4	1	1	0	0	
16	1	43	2	3	6	4	5	5	3	4	5	4	3	5	1	1		7	4	2	2	4	3	4	1	2	1	1
17	1	58	1	2	7	4	4	4	3	3	5	5	2	2	3	1		3	4	1	1	1	1	3	1	2	1	1
18	1	48	2	2	1	4	4	4	3	3	3	3	3	2	2	2			0	0	0	0	1	1	1	1	1	
19	1	72	1	3	5	6	6	6	6	6	6	6	6	6	1	1		8	4	0	2	2	0	5	1	2	2	1
20	1	85	2	1	1	2	1	4	3	3	4	5	2	5	2	2		4	0	0	0	0	1	1	2	0	0	
21	1	57	2	2	4	4	4	5	4	3	3	2	2	4	2	1		5	1	1	0	1	1	7	1	1	1	0
22	1	25	1	3	3	5	5	5	4	4	6	4	3	6	2	1		4	3	2	2	3	2	6	1	2	1	1
23	1	17	1	2	2	4	5	4	4	3	4	2	3	4	2	1		1	0	0	0	0	1	1	2	1	1	

2. APAT Computer aids and news software codes

3) From Excel, all the answers of the questionnaire were exported in SPSS software

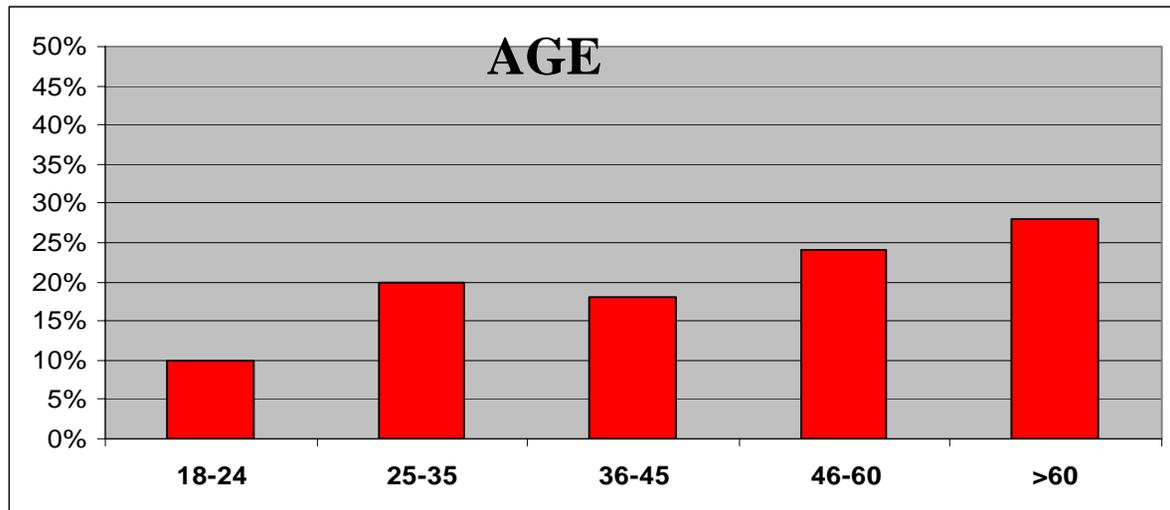
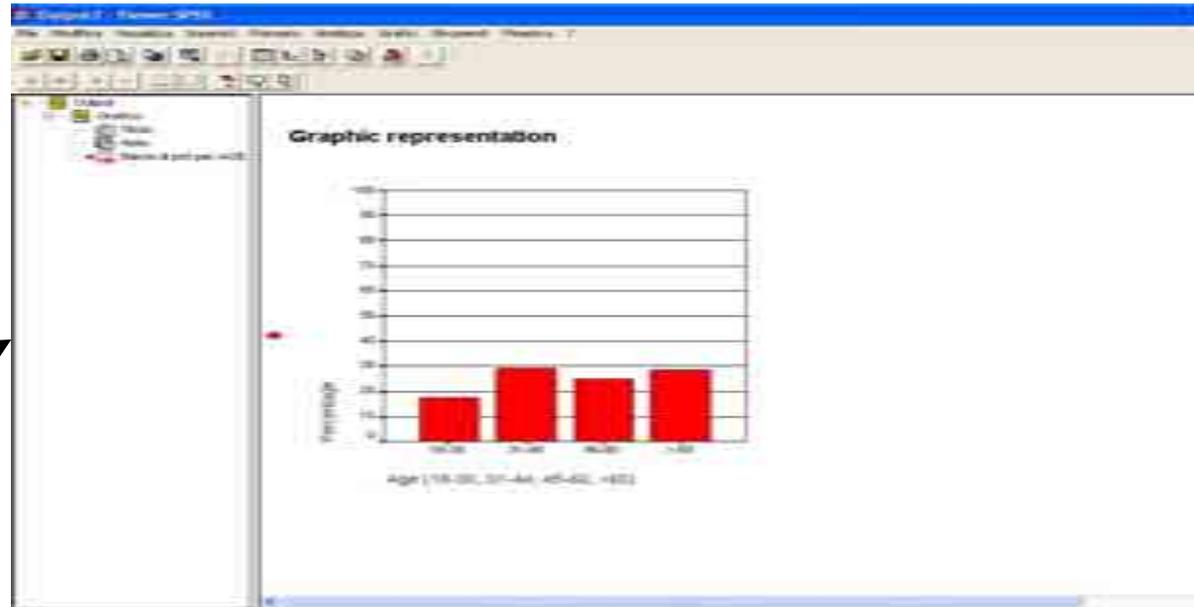


	int	regione	age	classe	sex	titolit	prof	escl	int1	int2	int3	int4	int5
1	1	Marche	30	31-45	Femmina	diploma	impiegato d	molto im	molto impo	molto impo	importante	molto impo	molto impo
2	2	Marche	69	> 80	Femmina	licenza ele	casalinga	fondamenta	fondamenta	fondamenta	fondamenta	fondamenta	fondamenta
3	3	Marche	51	45-60	Femmina	licenza ele	casalinga	molto impo	fondamenta	fondamenta	fondamenta	molto impo	fondamenta
4	4	Marche	62	> 80	Maschio	media	pensionata	fondamenta	fondamenta	fondamenta	fondamenta	fondamenta	fondamenta
5	5	Marche	29	18-30	Maschio	diploma	studente	molto impo	molto impo	fondamenta	fondamenta	fondamenta	importante
6	6	Marche	24	18-30	Femmina	diploma	studente	poco impor	fondamenta	fondamenta	fondamenta	fondamenta	molto impo
7	7	Marche	34	31-45	Femmina	diploma	disoccupat	molto impo	fondamenta	fondamenta	fondamenta	fondamenta	fondamenta
8	8	Marche	44	31-45	Maschio	laurea	impiegato d	poco impor	fondamenta	fondamenta	fondamenta	fondamenta	fondamenta
9	9	Marche	50	45-60	Femmina	diploma	impiegato d	importante	molto impo	fondamenta	importante	importante	importante
10	10	Marche	34	31-45	Maschio	media	impiegato d	fondamenta	fondamenta	fondamenta	importante	fondamenta	molto impo
11	11	Marche	77	> 80	Maschio	media	pensionata	molto impo	importante	poco impor	importante	importante	molto impo
12	12	Marche	26	18-30	Femmina	laurea	impiegato d	molto impo	fondamenta	molto impo	importante	molto impo	molto impo
13	13	Marche	28	18-30	Maschio	diploma	studente	molto impo	fondamenta	fondamenta	poco impor	poco impor	importante
14	14	Marche	63	> 80	Maschio	media	pensionata	importante	molto impo	fondamenta	molto impo	poco impor	importante
15	15	Marche	81	> 80	Maschio	licenza ele	pensionata	molto impo	molto impo	fondamenta	fondamenta	importante	importante
16	16	Marche	43	31-45	Femmina	diploma	impiegato d	molto impo	fondamenta	fondamenta	importante	molto impo	fondamenta
17	17	Marche	59	45-60	Maschio	media	pensionata	molto impo	molto impo	molto impo	importante	importante	fondamenta
18	18	Marche	48	45-60	Femmina	media	casalinga	molto impo	molto impo	molto impo	importante	importante	importante
19	19	Marche	77	> 80	Maschio	diploma	libero prof	fondamenta	fondamenta	fondamenta	fondamenta	fondamenta	fondamenta
20	20	Marche	86	> 80	Femmina	licenza ele	casalinga	poco impor	per niente i	molto impo	importante	importante	molto impo
21	21	Marche	52	45-60	Femmina	media	operaio	molto impo	molto impo	fondamenta	molto impo	importante	importante
22	22	Marche	25	18-30	Maschio	diploma	studente	fondamenta	fondamenta	fondamenta	molto impo	molto impo	fondamenta
23	23	Marche	47	31-45	Femmina	diploma	casalinga	molto impo	fondamenta	fondamenta	molto impo	importante	molto impo
24	24	Marche	56	45-60	Maschio	media	operaio	fondamenta	fondamenta	fondamenta	molto impo	molto impo	fondamenta
25	25	Marche	66	> 80	Maschio	diploma	impiegato d	fondamenta	importante	fondamenta	molto impo	fondamenta	molto impo
26	26	Marche	63	> 80	Femmina	laurea	impiegato d	fondamenta	fondamenta	fondamenta	molto impo	molto impo	molto impo
27	27	Marche	23	18-30	Maschio	diploma	impiegato d	molto impo	molto impo	molto impo	molto impo	molto impo	molto impo
28	28	Marche	61	> 80	Maschio	media	operaio	importante	importante	importante	poco impor	poco impor	importante
29	29	Marche	83	> 80	Maschio	licenza ele	pensionata	importante	importante	poco impor	importante	poco impor	importante
30	30	Marche	74	> 80	Femmina	licenza ele	pensionata	per niente i	poco impor	poco impor	poco impor	per niente i	per niente i

2. APAT Computer aids and news software codes

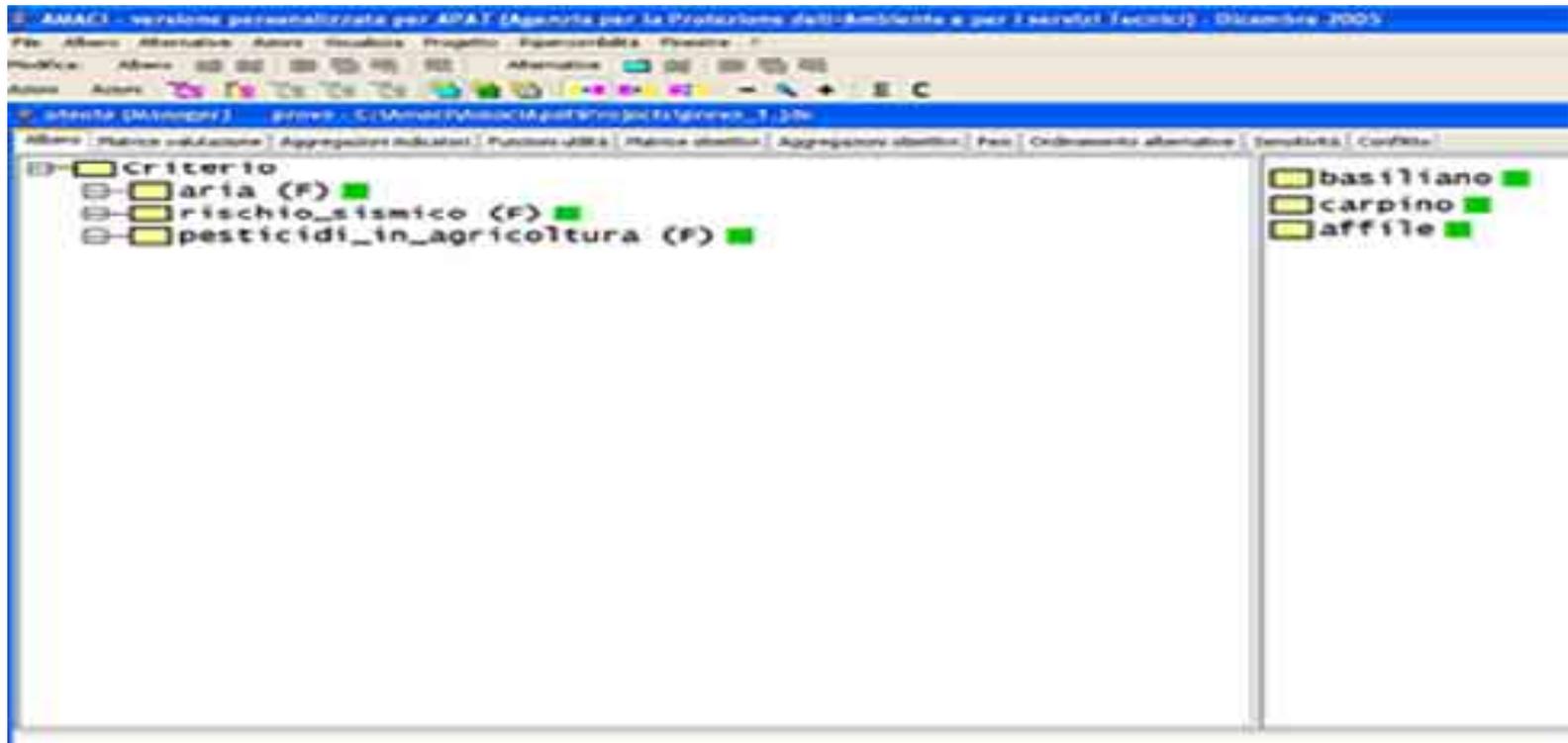
4) Finally, with SPSS software has been possible to carry out 'tables of frequency' for each data and to represent these data in graphics

Using this software codes it's possible to collect and represent data for environmental protection training activities



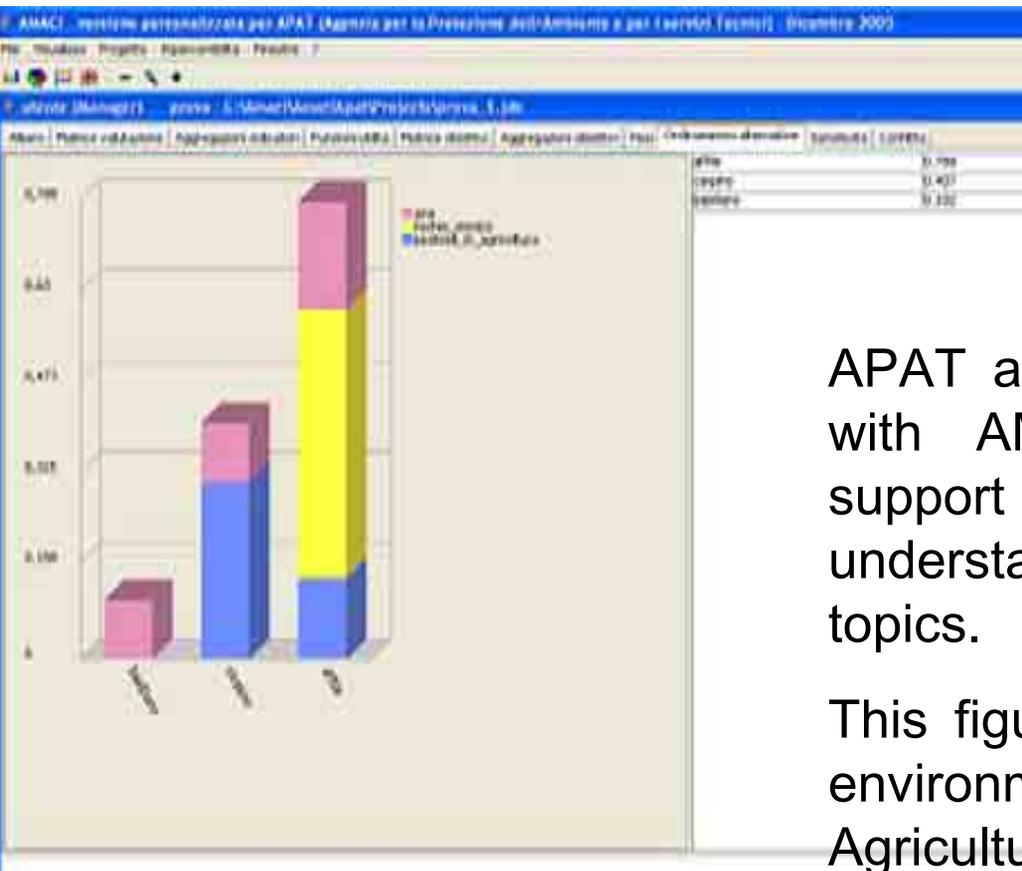
2. APAT Computer aids and news software codes

AMACI



APAT has performed a case study using AMACI software code, an experimental tool that supports decision processes on environmental issues, recently acquired by APAT. Particularly, this figure shows a case study with different alternatives (Three Local Municipalities) and environmental criteria (Air, Seismik Risk, Agricultural Fertilizer).

2. APAT Computer aids and news software codes



AMACI

APAT application of specific case studies with AMACI software code can also support working groups' activities to better understand environmental protection topics.

This figure shows an example how some environmental issues (Air, Seismic Risk, Agricultural Fertilizer) have a different relevance within three local Municipalities.

3. APAT multimedia

The European toolkit 'Jiffy quiz'



APAT participates to the activities of the European Commission DG Environment to the promotion and diffusion of environmental information and best practices in lifestyle and behaviours by means of interactive tools, such as the Jiffy's Eco Quiz – the European environmental toolkit for citizens.

Playing Jiffy's Quiz, user can check his behaviour and test his level of knowledge, and get practical advice on how to decrease his environmental impact.

3. APAT multimedia

The Jiffy's Quiz CD Rom, available in all languages of EU Member States, is developed through the Macromedia FLASH software that allows to create a virtual interactive environment.

In fact, in this CD-rom, user can select a specific question, choose an answer within three alternatives and receive immediately the feedback, obtaining his personal score.



3. APAT multimedia

APAT has developed a CD-Rom to diffuse at Italian level a revision of the multimedia CD 'Teaching and Learning for a Sustainable Future' of UNESCO in order to facilitate its adoption by teachers and/or students.

The technical and scientific contents of this CD-Rom are organised in four different Themes:

- a) Introduction to a sustainable future
- b) Integration of sustainability into educational program
- c) Interdisciplinary courses
- d) Didactical methodologies

Moreover, within these main themes, have been highlighted specific alternative courses, characterised by different colours

3. APAT multimedia

Indice

Tema A Introduzione	Tema B L'integrazione della sostenibilità nei programmi educativi	Tema C Percorsi Interdisciplinari	Tema D Metodologie didattiche
<p>Moduli</p> <p>1 – Esplorare le realtà globali</p> <p>2 – Capire lo sviluppo sostenibile</p> <p>3 – Una prospettiva futura</p> <p>4 – Riorientare l'educazione per uno sviluppo sostenibile</p> <p>5 – Accettare la sfida</p>	<p>Moduli</p> <p>6 – Il futuro sostenibile nei programmi scolastici</p> <p>7 – Educazione alla cittadinanza attiva</p> <p>8 – Educazione alla salute</p> <p>9 – Educazione ai consumi</p>	<p>Moduli</p> <p>10 – Cultura e religione per un futuro sostenibile</p> <p>11 – Cultura indigena e sostenibilità</p> <p>12 – Donne e sviluppo sostenibile</p> <p>13 – Demografia e sviluppo sostenibile</p> <p>14 – Capire il problema della fame nel mondo</p> <p>15 – Agricoltura sostenibile</p> <p>16 – Turismo sostenibile</p> <p>17 – Comunità locali sostenibili</p>	<p>Moduli</p> <p>18 – Apprendere con il metodo sperimentale</p> <p>19 – Il metodo narrativo</p> <p>20 – Educazione ai valori</p> <p>21 – Apprendere con il metodo dell'indagine</p> <p>22 – Accertamento e Valutazione</p> <p>23 – Risolvere i problemi futuri</p> <p>24 – Apprendere fuori dell'aula</p> <p>25 – Risolvere i problemi futuri nella comunità locale</p>

I contenuti dei temi sopra elencati, nell'ambito dei singoli moduli, sono consultabili anche secondo 3 percorsi specifici:

1. **Introduzione al concetto di sviluppo sostenibile** (Contrassegnato da  e dalle frecce )
2. **Cultura dell'educazione per lo sviluppo sostenibile** (Contrassegnato da  e dalle frecce )
3. **Tecniche innovative di insegnamento / apprendimento** (Contrassegnato da  e dalle frecce )