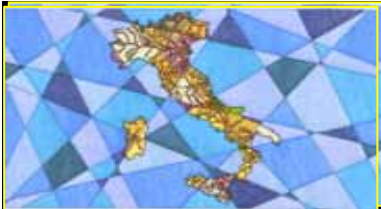




*Autorità di Bacino
dei Fiumi Liri-Garigliano e Volturno*

EUROPE – INBO 2007 Rome 7th – 9th november





MEANINGFUL ASPECTS OF LAW 183/89



SUSTAINABLE
DEVELOPMENT

TARGETS

Integrated defense, protection and exploitation of soil, water and environment resources
– sustainability of resources uses

TERRITORY

Hydrographic basin: territorial reference unit

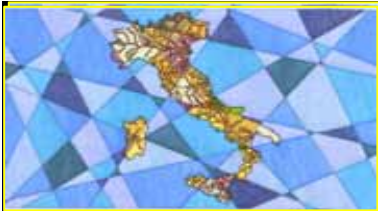
ORGANIZATION

National Basin Authorities
Interregional Basin Authorities
Regional Basin Authorities

OPERATIONAL TOOL

• Basin Plan: dynamic and continuously updated general programming tool; aims of this tool are physical system protection and safeguard (geology, hydrogeology, hydraulic, environment, urbanistic, landscape, etc.)

PUBLIC STAKEHOLDERS PARTICIPATION



BASIN PLANNING EVOLUTION



Law 183 of 1989

Territory

Hydrographic basin

Planning tool

- Basin Plan divided in thematic subplans and subbasin plans (art 12, co.4 lett. b)
- Safeguard measures, immediately binding, are valid until plan approval and anyway no more of three years (Art.17 co.6 bis)

Organization

Basin Authorities



L. 493/93

Basin Plan can be realised and approved also divided in sub plan referred it to sub basins and themes. (art.12 co.6-ter)

DL.180 e s.m.i.

- Art.1 Hydrogeologic Risk Plan Design
- Extraordinary Plan for removal of higher hydrogeologic risk situation

DLg.vo 152/99

Water Resources Protection Plan

L.365/00

- Procedures for adoption of sub plan designs (art.1 bis co.1)
- Programming conferences (art.1 bis co.3)



Water Framework Directive



Proposal for D.lg.vo 152/06 revision and updating

Territory

Hydrographic District

Planning tools

- River Basin Management Plan: Hydrogeologic Risk Plan, Management Plan;
- Director Plan;
- Extraordinary Plan for removal of higher hydrogeologic risk situation
- Water Resources Protection Plan
- Ambito Plan

Organization

District Authorities



NEW PERSPECTIVES FOR BASIN PLANNING ACTION RELATED TO EUROPEAN PROGRAMMING



SOIL

- Environmental strategy for sustainable development in Italy – Delibera CIPE 57/2002
- 6° environmental action plan;
- Thematic strategy for soil defense (COM 2002/197 - COM 2006/231) and directive proposals;
- D.L.vo n°152/2006.

WATER

- Environmental strategy for sustainable development in Italy – Delibera CIPE 57/2002
- WATER FRAMEWORK DIRECTIVE;
- D.L.vo 152/2006;
- Directive 2006/118/CE
- COM 2007/414.

FLOODS

- Environmental strategy for sustainable development in Italy – Delibera CIPE 57/2002
- European action plan for flood risk management (COM 2004/472);
- Directive about flood risk evaluation and management (november 2007).

AMBIENTE

- Environmental strategy for sustainable development in Italy – Delibera CIPE 57/2002
- European Landscape Convention;
- 6° environmental action plan;
- Codice Urbani.

QSN (2007-2013) 7th framework program for european activities about research, technology development and application (2007-2013)

ENVIRONMENTAL COMUNICATION

- Aarhus Convention;
- Application Regulation CE/1367/2006.



LAW 183/89 AND WATER RESOURCES



Law 183/89 have anticipated contents of **Water Framework Directive (WFD)**, affirming necessity of a planning action implying environmental, social and economic sustainability of “water”.

Law 183/89 and its successive modification and updating, have also introduced ideas and elements strongly innovative for water resources planning, especially:

- **minimum stream flow**, for river ecosystems protection and safeguard
- possibility to individuate **optimal territorial areas** for water resources management planning.

Moreover, successive and updating individuated **water budget** as a central element for water resources government.



PRINCIPAL LAWS AFTER LAW 183/89



Most important laws introduced after law 183/89 are:

- **law 36/94** (Galli law)
- **D.P.R. 18th July 1995** (Document for addressing and coordination of Basin Plan realization)
- **D.P.C.M. 4th March 1996** (decree for Galli law implementation)
- **D. L.vo 152/99** (water resources protection from pollution)
- **D.P.C.M. 28th July 2004** (guidelines for water budget and minimum stream flow)

Law 36/94 and **D.L.vo 152/99** have been cancelled and substituted by **D. L.vo 152/06** (its revision and updating is actually in progress).

Con la ex Law 36/94 individuated **optimal territorial area** as unit, individuated priority on the basis of physical features, for a correct water resources management.

In the same law, optimal territorial area should have a plan (**Piano d'Ambito**) to program actual and future uses, and to program infrastructural interventions too.



DLg.vo 152/99 AND RELATED PROBLEMS 1/2



Water resources planning referred to physical unit has been discussed by **DLg.vo 152/99**.

In law 183/89 Basin Plan, related to water resources, must contain analysis of quality and quantity aspects and their interaction with water uses.

The **DLg.vo 152/99** has introduced a **vulnus** in this principle of unitary planning, attributing to Regions realising of **Water Resources Protection Plan (PTA)**, defined in the decree as "as functional part of Basin Plan".



IL DLg.vo 152/99 AND RELATED PROBLEMS 2/2



The only one elements which *link*, in the *DLg.vo 152/99*, **Water Resources Protection Plan** to river basin is represented by the *coherence* betweenra Plan and **targets at basin scale** individuated by the Basin Authorities for each water.

This link clearly appear not sufficient to guarantee an unitary and omogeneous planning at basin scale.

A river which crosses more Regions can have reaches interested by different measures (because Plan has been made by different Regions) or reaches do not interested by any measures (if a Region did not realise a Water Resources Protection Plan).

It is clear the gap among necessity of water resources *government* at basin scale and law contents.



LA WFD AND MEDITERRANEAN AREA



The **WFD**, has some *problems* for its implementation related to mediterranean area features; these problems are about:

- **groundwater bodies**
- **water scarcity.**

To solve the *problems* have been European Union start up two actions:

- **Directive 2006/118/CE** about **groundwater bodies**
- activities for updating of **WFD** related to **water scarcity** topics.



IMPLEMENTATION PROCESS OF WFD IN ITALY



Italy has currently started implementation process of **WFD**.

Law for directive actuation is **DLg.vo 152/06**; this law has some problematic aspects and its revision and updating is actually in progress.

National Basin Authorities are involved in implementation process and they play a support role for Environment Ministry.

Activities realised until now by Basin Authorities are:

- **Report art. 5;**
- **Surface water bodies type classification;**
- **Groundwater bodies characterization.**



RELATIONSHIP BETWEEN LAW 183/89 AND WFD



It is important to underline that **law 183/89** already contained many elements characterizing the **WFD**.

These elements are summarized below:

- ***coordinated management of water resources cycle;***
- ***reference physical system considered in all its components (natural and anthropic environment);***
- ***strong relationship between water resources protection and environmental quality;***
- ***possibility to divide River Basin Management Plna in sub-plans;***
- ***public participation.***



OTHER WFD ASPECTS INCLUDED IN ITALIAN LEGISLATION



The *D.P.R. of July 1995*, which defines **Basin Plan** contents, indicated as necessary:

- **Physical system characterization** (item 1 Annex VII WFD)
- **Pressure analysis** (item 2 Annex VII WFD)
- **Water resources quality and quantity status** characterization (item 2 Annex VII WFD)
- **Monitoring networks** (item 4 Annex VII WFD)
- **Social and economic analysis** (item 6 Annex VII WFD)
- **Criticality individuation** (analysis stage of acquired informations)
- **Measures programs** (item 7 Annex VII WFD)
- **Inventory of other plans and of competent authorities** (items 8 and 10 Annex VII WFD)
- **Public participation** (item 9 Annex VII WFD)

Item shortly listed above *trace*, with the due differences, contents of River Basin Management Plan specified in **Annex VII** of Directive.



DISCREPANSIES BETWEEN WFD AND ITALIAN LEGISLATION



Focusing attention on Italian situation, the *D. L.vo 152/06* does not solve, also in revision draft text, the problem created by separation between *Water Resources Protection Plan* e *planning action at basin scale*.

Instead, the *WFD* require an only one plan, the *River Basin Management Plan*, which should be elaborated at basin scale, or better at district scale. River Basin Management Plan should contain not only physical and environmental system characterization but also measure programs, action for monitoring and for public participation.

Therefore, the element of contrast between Italian legislation and European legislation is clearly a not homogeneous water resources planning, related to reference physical unit.



WATER RESOURCES PLANNING OF BASIN AUTHORITIES IN ITALY



Despite showed problems about legislation aspects, Basin Authorities started, and partially completed, a massive activities about water resources planning.

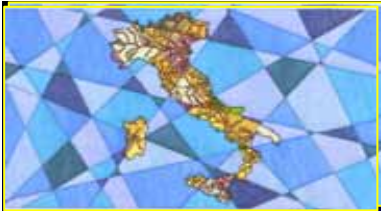
These activities can be summarized in:

- *Cognitive activities and preliminary studies*
- *Specific programs and projects*
- *Sub-plans of Basin Plan*

The first item, completed but in continuous updating, has required a strong work, because technical staff operated at *high detail scale* (also 1:25.000) and on *large areas*, and for chronic lack of an adequate and efficient monitoring network for water resources quality and quantity.

The second item is referred to activities realised about specific themes or territorial areas, also with agreement with public stakeholders (*Regioni, Province, Comuni, Comunità Montane, Consorzi di Bonifica, ecc.*).

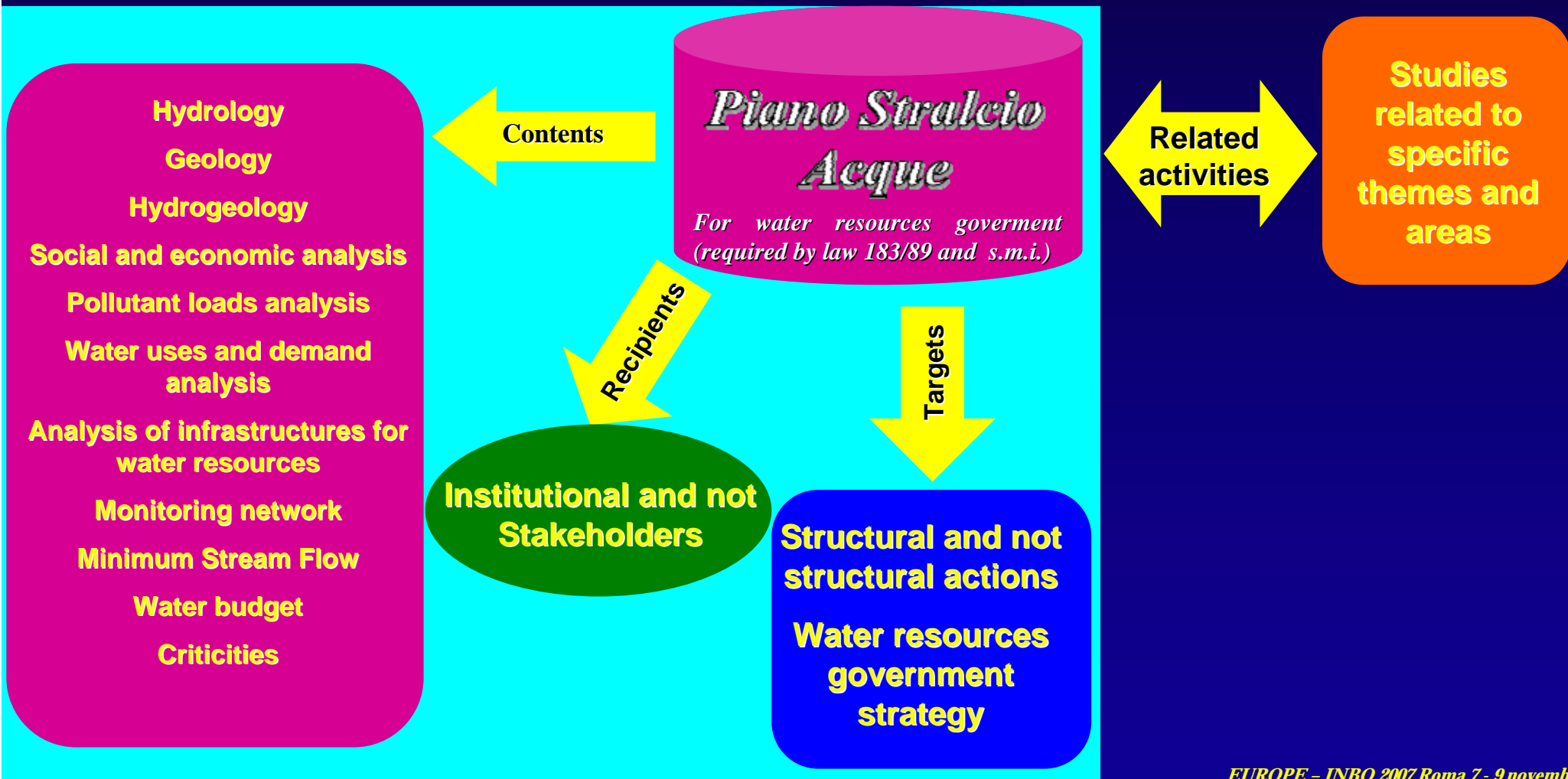
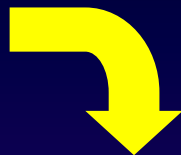
Sub-plans elaboration required a strong effort to build up a knowledge system. Basin Authorities in sub-plans realization took in account also WFD requirements for River Basin Management Plan.



WATER RESOURCES MANAGEMENT PLAN TEMPLATE STRUCTURES



Preliminary Studies





STATUS OF WATER RESOURCES PLANNING ACTION IN ITALY (NATIONAL BASIN AUTHORITIES)



WATER RESOURCES PLANNING STATUS IN ITALY - (NATIONAL BASIN AUTHORITIES)

Basin Authorities	ACTIVITIES THEMES																	
	Landslides			Floods			Water			Environment			Coast			Other		
	Plans	Studies	Related activities*	Plans	Studies	Related activities*	Plans	Studies	Related activities*	Plans	Studies	Related activities*	Plans	Studies	Related activities*	Plans	Studies	Related activities*
<i>Adige river</i>	☺	☺		☺	☺	☺		☺	☺		☺	☺		☺		☺	☺	
<i>Alto Adriatico rivers</i>	☺			☺		☺	☺		☺							☺		☺
<i>Arno river</i>	☺	☺	☺	☺	☺	☺	☺	☺				☺		☺		☺	☺	
<i>Liri-Garigliano and Volturno river</i>	☺	☺	☺	☺	☺	☺	☺	☺		☺	☺	☺	☺			☺	☺	☺
<i>Po river</i>	☺	☺		☺	☺	☺	☺	☺	☺		☺						☺	
<i>Serchio river</i>	☺		☺	☺		☺	☺		☺		☺				☺			☺
<i>Tevere river</i>	☺			☺			☺	☺	☺	☺		☺	☺					☺

(*) related activities are safeguard measures, guidelines, agreements, etc.



STATUS OF WATER RESOURCES PLANNING ACTION IN ITALY (NATIONAL BASIN AUTHORITIES)



WATER RESOURCES PLANNING STATUS IN ITALY
(NATIONAL BASIN AUTHORITIES)*

Basin Authority	ACTIVITIES THEMES					
	Landslide and avalanches	Floods	Water	Environment	Coast	Other
Adige River	<p><u>Piano straordinario per la rimozione delle situazioni a rischio idrogeologico più alto.</u></p> <p><u>Piano Stralcio per la tutela dal Rischio Idrogeologico e Progetto di 1° variante al piano stralcio per la tutela dal rischio idrogeologico, per le aree in dissesto da versante</u></p> <p><u>Realized studies</u> Individuation of area at landslide and avalanche risk in Adige basin.</p> <p>Publication search and catalogue on flood events, landslides and river process in Adige basin.</p>	<p><u>Piano Stralcio per la tutela dal Rischio Idrogeologico Bacino dell'Adige, Regione Veneto (Approved by D.C.P.M. of 27/6/2006)</u></p> <p><u>Variante del piano con la modifica della perimetrazione di aree di pericolosità in Comune di San Martino Buon Albergo (VR)</u></p> <p><u>Linee guida per la redazione delle relazioni di compatibilità idraulica</u></p> <p><u>Studio di fattibilità per l'individuazione delle opere necessarie alla mitigazione del pericolo idraulico sottobacino del torrente Tasso</u></p> <p><u>Project:</u> Sub-plan for regulation of Adige river flow (in progress)</p> <p><u>Realized studies</u> Preliminary design of flow lamination tanks for Adige river in the territory of province of Bolzano.</p>	<p><u>Adozione degli obiettivi e delle priorità d'intervento dei piani di tutela su scala di bacino, ai sensi dell'art. 44 del D.Lgs 152/99</u></p> <p><u>Attività di monitoraggio sulla disponibilità idrica nel Bacino del Fiume Adige</u></p> <p><u>Projects</u> Preliminary water budget in Adige basin (in progress)</p> <p><u>Realized studies</u> Environmental analysis of iporeic interface in Adige basin, pilot project in the sub-basin of Avisio stream.</p> <p>Computation of GEcoRA (Groundwater Ecological Risk Assessment) in deep groundwater in Adige basin.</p> <p>Investigation for elaboration of an operative program for integrated water resources management in Avisio basin.</p> <p>Water resources management and inventory of exploitation points and discharges in Adige basin.</p>	<p><u>Projects</u> Pilota Plan for Adige river reach Pontoncello - Tombazosana (in progress)</p> <p><u>Studies in progress</u> Flow regulation: guideline for eco-compatible management of ecosystem and river dynamic.</p> <p>Integrated model for analysis, evaluation and of environmental management of the system river Adige - river corridor</p> <p>Project for the river restoration in areas close the river Adige.</p> <p>Investigation on the Avisio stream as landscape, urbanistic, territorial and environmental element.</p> <p>Application of techniques and methodologies of remote sensing for environmental analysis.</p>	<p><u>Realized studies</u> Multispectral analysis of caostal area of Adige river.</p>	<p><u>Elaborazione di Proposta di piano pilota del Sottobacino dell'Avisio</u></p> <p><u>Realized studies</u> Coordination program for the activities of meteorological and climatic survey in the Adige basin for the Civil Rescue improvement and radar system experimentation and maintenance.</p> <p>Georeferenziazione hydraulic works in Avisio basin.</p> <p>Introductory and preliminary evaluation of the effects determined by the climatic changes.</p> <p>Relief of topographic level in bandages of streams Avisio and Travignolo and Adige river.</p> <p>Topographical and geologic reliefs embankment system of Adige river.</p>

* Data have been acquired directly or on the web site



STATUS OF WATER RESOURCES PLANNING ACTION IN ITALY (NATIONAL BASIN AUTHORITIES)



WATER RESOURCES PLANNING STATUS IN ITALY
(NATIONAL BASIN AUTHORITIES)*

Basin Authority	ACTIVITIES THEMES					
	Landslide and avalanche	Floods	Water	Environment	Coast	Other
Adige River		<p>Activities for individuation of necessary intervention deputed to maximum water flow reduction of Avisio river.</p> <p>Study finalized to the realization of hydraulic works inventory in Adige basin.</p> <p>Know-how updating for Avisio stream conoide.</p> <p>Investigation on areas at flood risk in Adige basin, with individuation of the areas.</p> <p>Mathematic model for rain-flow trasformation.</p> <p><u>Studies in progress</u> Hydrogeologic defence in Adige basin.</p>	<p>Experimentation on the Adige river of evaluation of minimum stream flow integrated in a Operative Program.</p> <p>Screening on water network in Avisio basin municipalities.</p> <p>Mountain aquifers studies from Resia to Domiglaira and plain aquifers.</p> <p>Small dams inventory in province of Bolzano</p> <p>Deep analysis of Avisio conoide - intrinsec vulnerabilty of aquifer.</p> <p><u>Studies in progress</u> Monitoring and computing of agricultural water demand in the territory of Consortia for land accretion irrigated by Adige river exploitation.</p>	<p>Antropic pressures factors evaluation in sub-basin of the river Adige.</p> <p>Quality of the shores of the Adige river.</p>		<p><u>Studies in progress</u></p> <p>Sustainable management of the trout marmorata (S.t. Marmoratus) in the Adige basin: genetic characterization, fenotipica and ecological finalized protection. (named project GAME)</p>

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STATUS OF WATER RESOURCES PLANNING ACTION IN ITALY (NATIONAL BASIN AUTHORITIES)



WATER RESOURCES PLANNING STATUS IN ITALY
(NATIONAL BASIN AUTHORITIES)*

Basin Authority	ACTIVITIES THEMES					
	Landslide and avalanche	Floods	Water	Environment	Coast	Other
Alto Adriatico Rivers	<p><u>Progetto di Piano Stralcio per l'Assetto Idrogeologico dei bacini idrografici dei fiumi Isonzo, Tagliamento, Piave, Brenta-Bacchiglione e delle relative misure di salvaguardia</u> Adopted by the deliberations of the Institutional Committee n. 1 e n. 2 of 03.03.2004</p> <p><u>Progetto di Piano Stralcio per l'Assetto Idrogeologico del bacino idrografico del fiume Livenza e delle relative misure di salvaguardia</u> Adopted by the deliberations of the Institutional Committee n. 2 e n. 3 of 25.02.2003</p>	<p><u>Piano per la regolazione delle utilizzazioni idriche nel medio bacino del Piave in concomitanza di fenomeni siccitosi</u> Adopted by the deliberation n. 10 of the Institutional Committee of 24 luglio 1995</p> <p><u>Programma d'interventi per la esecuzione di opere di sistemazione idraulica e di risanamento delle acque del bacino dell'Isonzo</u> Adopted by the deliberation n. 15 of the Institutional Committee of 12/12/1995</p> <p><u>Rapporto sullo stato della sicurezza idraulica nei bacini di competenza</u> Adopted by the deliberation n. 17 of the Institutional Committee of 12/12/1995</p>	<p><u>Bacino del fiume Piave. Piano stralcio per la gestione delle risorse idriche del bacino del fiume Piave.</u> Approved by Ministers Council and waiting for D.P.C.M.</p> <p><u>Misure di salvaguardia finalizzate alla tutela delle risorse idriche nel bacino del f. Tagliamento</u> Adopted by the deliberation n. 6 of the Institutional Committee of 3/3/2004</p> <p><u>Misure di salvaguardia relative alla gestione delle risorse idriche nel bacino del Piave</u> Adopted by the deliberation n. 4 of the Institutional Committee of 3/3/2004</p>			<p><u>LABORATORIO Livenza 2007</u> <u>Guidelines:</u> participated process for evaluation and sharing the intervention hypothesis, priority and implementation mode for Hydraulic Protection Sub-Plan in Livenza Basin (Meduna-Cellina sub-basin).</p> <p><u>Plans in progress:</u></p> <p>Project of sub-plan for definition of pertinence bands of river in Tagliamento basin.</p> <p>Project of sub-plan for hydraulic security and water resources management in Brenta basin.</p>

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WATER RESOURCES PLANNING STATUS IN ITALY
(NATIONAL BASIN AUTHORITIES)*

Basin Authority	ACTIVITIES THEMES					
	Landslide and avalanche	Floods	Water	Environment	Coast	Other
Alto Adriatico Rivers		<p><u>Piano stralcio per le aree a rischio idrogeologico molto elevato di cui al DL 180/98</u> Adopted by the deliberation n. 8 of 10/11/1999</p> <p>Misure di salvaguardia finalizzate all'utilizzo del serbatoio del Corlo per la laminazione delle piene del Brenta Adopted by the deliberation n. 6 of the Institutional Committee of 6/8/2004</p> <p><u>Bacino del Tagliamento</u> <u>Piano stralcio per la sicurezza idraulica del medio e basso corso.</u> Approved by D.P.C.M. of 28/8/2000</p> <p><u>Bacino del Livenza</u> <u>Sottobacino del Cellina-Meduna</u> <u>Piano stralcio per la sicurezza idraulica</u> Approved by D.P.C.M. of 27/4/2006</p>				

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STATUS OF WATER RESOURCES PLANNING ACTION IN ITALY (NATIONAL BASIN AUTHORITIES)



WATER RESOURCES PLANNING STATUS IN ITALY
(NATIONAL BASIN AUTHORITIES)*

Basin Authority	ACTIVITIES THEMES					
	Landslide and avalanche	Floods	Water	Environment	Coast	Other
Alto Adriatico Rivers		<p><u>Bacino del Piave</u> <u>Piano stralcio per la sicurezza idraulica del medio e basso corso.</u> Adopted by the deliberation n. 1 of the Institutional Committee of 05.02.2001</p> <p><u>Progetto di Piano Stralcio per l'Assetto Idrogeologico del bacino idrografico del fiume Livenza</u> Adopted by the deliberation n. 2 of the Institutional Committee of 25.02.2003</p> <p><u>Progetto di Piano Stralcio per l'Assetto Idrogeologico dei bacini idrografici dei fiumi Isonzo, Tagliamento, Piave, Brenta-Bacchiglione</u> Adopted by the deliberation n. 1 of the Institutional Committee of 03.03.2004</p>				

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STATUS OF WATER RESOURCES PLANNING ACTION IN ITALY (NATIONAL BASIN AUTHORITIES)



WATER RESOURCES PLANNING STATUS IN ITALY
(NATIONAL BASIN AUTHORITIES)*

Basin Authority	ACTIVITIES THEMES					
	Landslide and avalanche	Floods	Water	Environment	Coast	Other
Alto Adriatico Rivers		<u>Variante al Progetto di Piano Stralcio per l'Assetto Idrogeologico (PAI) dei bacini idrografici dei fiumi Isonzo, Tagliamento, Piave, Brenta-Bacchiglione e delle relative misure di salvaguardia</u> Adopted by the deliberation n. 4 of the Institutional Committee of 19.06.2007				

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STATUS OF WATER RESOURCES PLANNING ACTION IN ITALY (NATIONAL BASIN AUTHORITIES)



WATER RESOURCES PLANNING STATUS IN ITALY
(NATIONAL BASIN AUTHORITIES)*

Basin Authority	ACTIVITIES THEMES					
	Landslide	Floods	Water	Environment	Coast	Other
Arno River	<p><u>" Piano di bacino del fiume Arno, stralcio assetto idrogeologico"</u> Approved by D.P.C.M. 6/5/2005 (Sub-plan contains also hydraulics hazard)</p> <p><u>Linee guida per la stabilizzazione delle frane e strategie di mitigazione del rischio nel bacino dell'Arno</u> Approved with deliberation Istitutional Committee n. 196 of 19/6/2007.</p> <p><u>Realized studies:</u> Susceptibility and inventory of landslide areas.</p>	<p><u>Piano Stralcio: "Riduzione del Rischio Idraulico" del bacino del fiume Arno</u> Approved with D.P.C.M. 5/11/1999</p> <p><u>"Linee guida per la progettazione delle casse di laminazione"</u></p> <p><u>Realized studies:</u> SIMI (SIT - Hydraulic Model) (studies for PAI)</p>	<p><u>Piano Stralcio "Qualità delle acque del fiume Arno"</u> Approved by D.P.C.M. 31/3/1999</p> <p><u>Realised studies:</u> Obiettivo Arno - IFF and IBE report and analysis</p> <p><u>Documento propedeutico per la redazione del Piano di Bacino, stralcio bilancio idrico</u></p> <p>Characterization of meaningful aquifers of alluvial plains of Arno basin</p> <p><u>Progetto pilota per la determinazione e verifica del deflusso minimo vitale su base biologica per l'asta del fiume Sieve</u></p> <p><u>Modello idrologico distribuito per il bilancio della risorsa idrica</u></p>	<p><u>"Linee guida per la caratterizzazione della Biodiversità nelle fasce fluviali"</u></p> <p><u>"Linee guida per la gestione sostenibile dei vigneti collinari"</u></p> <p><u>"Guida pratica per l'individuazione, la classificazione, la rappresentazione e la gestione degli elementi geomorfologici applicati alla pianificazione"</u></p>	<p><u>Realized studies:</u> Evolution and dynamics of coastal area of Arno and Serchio basins and coastal erosion problems.</p>	<p><u>Piano stralcio "Attività estrattive del fiume Arno"</u> Approved by D.P.C.M. 31/3/1999</p> <p><u>Realized studies:</u> Subsidence: analysis of subsidence phenomena in Arno basin.</p> <p>Study of dynamics of primary source areas of sediment in pilot basin of Bilancino: PROGETTO BABI</p>

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STATUS OF WATER RESOURCES PLANNING ACTION IN ITALY (NATIONAL BASIN AUTHORITIES)



WATER RESOURCES PLANNING STATUS IN ITALY
(NATIONAL BASIN AUTHORITIES)

Basin Authority	ACTIVITIES THEMES					
	Landslide	Floods	Water	Environment	Coast	Other
Liri-Garigliano and Volturno Rivers	<p><u>Piano Straordinario Difesa Alluvioni Bacino Liri-Garigliano</u> Approved by deliberation of Institutional Committee n°1 of 27/10/1999</p> <p><u>Adozione misure di salvaguardia - Piano Straordinario L. 226/99</u> <u>Rischio Frane</u></p> <p><u>Piano Stralcio Difesa Aree in Frana Bacino Liri-Garigliano-Volturno</u> Approved by D.P.C.M. of 12/12/2006</p> <p><u>Realized Projects:</u> Territory susceptibility related to fast mud flow - O.P.C.M. 2787/98 and others.</p> <p>Partnerships with task force of Superior Council of Public Works - Hydrogeologic Emergency may 1998.</p>	<p><u>Piano Straordinario Difesa Alluvioni Bacino Liri-Garigliano</u> Approved by deliberation of Institutional Committee n°2 of 27/10/1999</p> <p><u>Adozione misure di salvaguardia - Piano Straordinario L. 226/99</u> <u>Rischio Idraulico Piano Stralcio Difesa Alluvioni Bacino Volturno</u> Approved by D.P.C.M. of 21/11/2001</p> <p><u>Bacino Liri-Garigliano</u> Approved by D.P.C.M. of 12/12/2006</p> <p><u>Variante al PSDA - Basso Volturno (PSDA-bav) da Capua a mare</u> Approved by D.P.C.M. of 10/12/04</p> <p><u>Estensione del PSDA alle aste vallive secondarie Bacino Volturno e Piano Stralcio Assetto Idrogeologico e Rischio Idraulico -</u></p>	<p><u>Preliminare di Piano Stralcio per il Governo della Risorsa Idrica Superficiale e Sotterranea Bacino Liri-Garigliano-Volturno</u> Approved by deliberation of Institutional Committee n° 1 of 26/07/2005</p> <p><u>Realized projects:</u> Project for rearrangement finalized to integrated management of hydraulic networks and of waste water treatment system in the metropolitan area of Napoli.</p> <p>Collaboration with Regione Molise for elaboration of the normalization methodology for water service rate definition. (L. 36/94).</p> <p>Partnership with IMI and SNAM Progetti (on University Ministry demand) "Control of water and soil to support resources and basin management". Liri-Garigliano Basin.</p>	<p><u>Piano Stralcio Tutela Ambientale:</u> <u>- PSTA Conservazione zone umide aree pilota le Mortine</u> Approved by D.P.C.M. of 28/04/2006</p> <p><u>- Documento di indirizzo ed orientamento per la pianificazione e programmazione della Tutela Ambientale ed applicazione dello stesso su aree pilota</u> Approved by deliberation of Institutional Committee n. 3 of 05/04/2006</p> <p><u>Realised projects:</u> Program elaboration for safeguard and exploitation of environmental resources in Volturno Valley included in Molise - area defined by Volturno - Cavaliere - Vandra rivers.</p> <p>Project for a correct management of vegetation and soil in the pertinence band of the rivers and in the</p>	<p><u>Piano Stralcio Erosione Costiera Bacino Liri-Garigliano-Volturno</u> In progress</p> <p><u>Project in progress:</u> Action "Master Plan finalized to defence, recovery and valorization of Litorale Domitio" - Volturno Basin.</p> <p><u>Activities in progress:</u> Collaboration with Regione Campania about "Feasibility study for individuation of an integrated system of interventions for Campania coast defence".</p> <p><u>Realized studies</u> <u>Volturno Basin:</u> Coast model.e</p>	<p><u>Perimetrazione del limite bacino Liri-Garigliano e Volturno in scala 1:250.000 D.P.R. giugno 98.</u></p> <p><u>Piano di recupero delle cave dismesse della provincia di Caserta</u></p> <p>Directive for evaluation of compatibility with plans and programs, realized by Basin Authorities, of interventions on territory. Completed</p> <p><u>Realized projects:</u> European REsearch Program Environment and Climate - Eurotas project (European River flood Occurance a red Total risk Assessment System - 97/00).</p> <p>Work proposal for revision of law n. 183 of 18/5/1989</p>



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Basin Authority	ACTIVITIES THEMES					
	Landslide	Floods	Water	Environment	Coast	Other
	<p>Elaboration of programs and actions for risk mitigation in the eighth municipalities of the O.P.C.M. 3036/00 9.02.00 (Cervinara, San Martino Valle Caudina, Pannarano, Pietrastornina, Roccabascerana, Cusano Mutri, Giffoni Valle Piana and Manocalzati).</p> <p>Specific studies (scale 1:5.000) for municipalities of Cervinara (AV) and S. Martino Valle Caudina, events of 15-16/12/99.</p> <p>Individuation of Hydrogeologic Risk Scenarios - Municipalities O.P.C.M. 3036/00 of 9.02.00 (Cervinara, San Martino Valle Caudina, Pannarano, Pietrastornina, Roccabascerana, Cusano Mutri, Giffoni Valle Piana e Manocalzati).</p>	<p><u>Bacino Agnena Savone In progress.</u></p> <p>New definition of Hydraulic Competences in Liri-Garigliano-Volturno Basins. Completed</p> <p>Directive for extraction of materials from rivers in Liri Garigliano e Volturno Basins. Completed</p> <p><u>Realized projects:</u> Participation to SIREN Project (Service d'Information sur les Risques Naturels d'Inondation) for a flood management based on satellite monitoring system.</p> <p>Guidelines for design of structural interventions finalized to flood defence in the Liri-Garigliano and Volturno Basins.</p> <p>Design of a system for flood forecasting - Volturno Basin.</p>	<p>Task force for elaboration of guidelines and criteria for water budget and minimum stream flow (d.l.vo 152/99) Coordination by ex Public Works Ministry.</p> <p>Roccamonfina Studies "Estimation of water abstraction and evaluation of water resources quantity decrease for volcanic complex Roccamonfina".</p> <p>Proposal of intervention finalized to monitoring and government of groundwater resources in the Liri - Garigliano and Volturno Basins (agreement with Environment Ministry).</p> <p>Proposal for Water Framework Directive implementation.</p> <p><u>Activities in progress:</u> Structural and non structural actions related to safeguard, use and government of surface water and groundwater resource - Piana del</p>	<p>homogeneous areas with high environmental value.</p> <p>Project "Environmental knowledge and population sensitization about desertification risk in Liri-Garigliano and Volturno Basins" (Realized with W.W.F. support).</p> <p>Collaboration with Environment Ministry - VIA department - about "Criteria for environment impact mitigation" related to Venafrana Road layout changes - SS 85.</p> <p>Elaboration proposal/projects with Province of Caserta, Environment Ministry referred to recovery and restoration of the degraded areas.</p> <p><u>Activities in progress:</u> Action program focused on environment recovery - Basin Authority - W.W.F.</p>		<p>(Parliament Commissions)</p> <p>Geochemical-environmental study on Volturno river (Support action to Geophysics and Volcanology Department - University of Naples).</p> <p>Realization of project "improvement of the integrated hydro-meteorologic monitoring network in territory of Naples SIMN Department - Remote monitoring network for flood forecasting - L. 267/98.</p> <p>Participation to works for POR and PON Program elaboration-Community Program 2000-2006.</p> <p>Program of activities Q.C.S. 2000-2006 Technical support PON - Obiettivo 1 Area.</p>



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Basin Authority	ACTIVITIES THEMES					
	Landslide	Floods	Water	Environment	Coast	Other
	<p><u>Activities in progress:</u> Sub-plan for Hydrogeologic Asset - Landslide Risk - Activities for pilot project "Detailed studies finalized to a new delineation of areas at landslide risk, Liri-Garigliano and Volturno basins" - 35 Pilot Areas.</p> <p>Elaboration of technical guidelines about hydrogeologic compatibility studies zone.</p> <p>Design of interventions for APQ Soil Defence Regione Campania.</p> <p>Feasibility studies to elaborate actions finalized to physical-environmental system government, with emphasis to resources water, soil and environment in Territory of Comunità Montana del Matese.</p> <p><u>Realised studies Liri-</u></p>	<p><u>Realized studies Liri-Garigliano Basin:</u> Solid transport</p> <p><u>Activities in progress:</u> Feasibility studies to elaborate actions finalized to physical-environmental system government, with emphasis to resources water, soil and environment in Territory of Comunità Montana del Matese.</p>	<p>Fucino - Regione Abruzzo.</p> <p>Water-Map Project - Interreg III B - development and utilization of vulnerability maps for monitoring and government of aquifers in the area ARCHIMED.</p> <p>Project for realization of a quality and quantity monitoring network of surface waters and groundwaters in the Volturno Basin included in territory of Campania..</p> <p>Feasibility studies to elaborate actions finalized to physical-environmental system government, with emphasis to resources water, soil and environment in Territory of Comunità Montana del Matese.</p> <p><u>Realised studies Liri-Garigliano and Volturno basins:</u> Water Resources Optimization</p>	<p>Feasibility studies to elaborate actions finalized to physical-environmental system government, with emphasis to resources water, soil and environment in Territory of Comunità Montana del Matese.</p> <p><u>Realised studies in Volturno Basin:</u> Preliminary study of agricultural resources, landscape and land use for human activities.</p>		<p>Program of activities Q.C.S. 2000-2006 - Technical support - collaboration for program document elaboration about soil resource - measures 1.5 and 1.6 - POR - Regione Campania.</p> <p>Participation to PASS Project: Operational Program 940022/i/1 - sub-program official of the public administration Obiettivo 1 "Methodologies, techniques and financing for eco-sustainable management of the river ecosystem" - sub-basin Sabato.</p> <p><u>Activities in progress:</u> Support to Department of National Civil Rescue related to Emergency Plans - whole territory.</p>



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Basin Authority	ACTIVITIES THEMES					
	Landslide	Floods	Water	Environment	Coast	Other
	<p><u>Garigliano and</u> <u>Volturno basins:</u> Landslide disorder.</p>					<p>Territorial data standardization on the basis of reference map system (SCR); activities coordinated by Environment Ministry.</p> <p>Design interventions APQ – Soil Defence Regione Campania.</p> <p>Contribution to VIA procedure for projects with territorial incidence.</p> <p>Contribution to VAS procedure for plans and programs at territorial scale and for next european programs QSN 2007-2013</p> <p>Realization of SITI Autorità di Bacino.</p> <p>Participation to European Program (Life, Interreg, etc).</p> <p>ISTAT: Informatization and georefering of of all informations</p>



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Basin Authority	ACTIVITIES THEMES					
	Landslide	Floods	Water	Environment	Coast	Other
						<p>available by Entities included in SISTAN.</p> <p>Intermunicipal Civile Rescue Plan Basso Volturno Area.</p> <p>Embankment monitoring activities Area Basso Volturno – reach from Capua to sea.</p> <p><u>Realized studies</u> <u>Liri-Garigliano-Volturno Basins:</u> Activity finalized to realization of Territorial Informative System S.I.B.A.L.I.G.A.</p>



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Basin Authority	ACTIVITIES THEMES					
	Landslide	Floods	Water	Environment	Coast	Other
Po River	<p><u>Piano stralcio per il ripristino dell'assetto idraulico (PS 45)</u> Adopted by Institutional Committee with deliberation n. 9 of 10/5/1995</p> <p><u>Piano straordinario per le aree a rischio idrogeologico molto elevato (PS 267)</u> Adopted by Institutional Committee with deliberation n. 14 of 26/10/1999</p> <p><u>Piano stralcio per l'assetto idrogeologico del delta del fiume Po (PAI Delta)</u> Adopted by Institutional Committee with deliberation n. 5 of 19/7/2007</p> <p><u>Piano stralcio per l'Assetto Idrogeologico (PAI)</u> Approved by Institutional Comitato istituzionale with deliberazione n. 18 of 2001.</p>	<p><u>Piano Stralcio per le Fasce Fluviali PSFF</u> now part of PAI</p> <p><u>Studi di fattibilità:</u> - Feasibility study about hydraulic improvement of natural and artificial rivers in plain area in basins Lambro - Olona</p> <p>- Feasibility study about hydraulic improvement of Adda river (reach from Olginate to Po) Brembo river (reach from Lenna to Adda) Serio river (from PArre to Adda).</p> <p>- Feasibility study of hydraulic improvement of Dora Balte river (reach from Aymavilles to Po).</p> <p>- Feasibility study about hydraulic improvement of Dora Riparia river (reach from Oulx to Po).</p> <p>- Feasibility study about hydraulic improvement of Oglio river (from Sonico to Po) and of Cherio river (from</p>	<p><u>Progetto di Piano stralcio per il controllo dell'Eutrofizzazione (P&E)</u> Adopted, by deliberation of Institutional Committee n. 15/2001 of 31/01/2001</p> <p><u>Activities related to deliberations n. 7, 13/03/2002, and n. 7, 3/03/2004, of Institutional Committee:</u> - <u>Quality target at basin scale and priority actions;</u> - <u>Criteria for waer budget at basin scale;</u> - <u>Criteria for flow regulation.</u></p> <p><u>Piano stralcio sul bilancio idrico</u> In progress after deliberation n. 4, 11/5/1999, of the Institutional Committee.</p> <p><u>Adozione di criteri per l'elaborazione del progetto di Piano stralcio per la gestione del bilancio idrico del</u></p>	<p><u>Realized studies:</u> <u>About land use:</u> •environmental impact evaluation, •agricultural uses, •soil pollution, •mining activities.</p> <p><u>About territorial development:</u> •cultural and environmental values; •urbanistic policies, •protected aresa, •local development.</p> <p><u>About environmental policies</u> •economic and social aspects, •ecology, •environmental training.</p> <p><u>About environmental and territorial information:</u> •territorial informative system •monitoring network, •base and thematic maps, •geography of Po basin, •methodology for elaboration and for quality of geographic data.</p>		<p><u>Progetto Reti Locali</u> Local networks interested by participated strategic planning process <u>In progress</u></p>

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Basin Authority	ACTIVITIES THEMES					
	Landslide	Floods	Water	Environment	Coast	Other
Po River	<p><u>Realized studies:</u> <u>Studies hydrogeologic asset</u></p> <ul style="list-style-type: none"> Hydrogeologic disorder, Soil defence, River network. <p><u>Adozione di variante al PAI Rete idrografica minore della Regione Piemonte.</u></p> <p><u>Approved</u> by Institutional Committee with deliberation n. 6 of 19/7/2007.</p>	<p>Endina Lake to end) of Mella river (from Brozzo to Oglio river) of Garza river (from Valle del Loc to in Chiese).</p> <p>- Feasibility study about hydraulic improvement of Secchia river (reach from Castellarano to Po).</p> <p>- Feasibility study about hydraulic improvement of Sesia river (reach from Varallo Sesia To Po) of Cervo stream (reach from Passo Breve to Sesia), of Elvo stream (reach from Occhieppo to Cervo).</p> <p>- Feasibility study about hydraulic improvement of Toce river (reach from Masera to end).</p> <p>- Feasibility study about hydraulic improvement of Trebbia river (reach from Perino to Po).</p> <p>- Specifications for hydraulic improvement study</p> <p>Specifications for</p>	<p><u>bacino idrografico del fiume Po.</u></p> <p><u>Approved</u> by Institutional Committee with deliberation n. 2, 19/07/2007.</p> <p><u>Attività realizzate nell'ambito del piano:</u></p> <ul style="list-style-type: none"> Experimentation of a management rule of Idro lake Rule about Minimum Stream Flow Water budget and Minimum Stream Flow in Valtellina (included in PAI) Unitary management of water scarcity crisis summer 2003 Agreement Protocol 2005 <p><u>Monitoring activities:</u> quality and quantity, geomorphology of river area, water budget.</p> <p><u>Realized studies:</u> <u>About water resources protection:</u></p> <ul style="list-style-type: none"> ecosystems, water protection, water pollution, 			

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Basin Authority	ACTIVITIES THEMES					
	Landslide	Floods	Water	Environment	Coast	Other
Po River		<p>topographic relief and aerophotogrammetry.</p> <p>- Specifications for relief of river bed deposits dimension.</p> <p>- Specifications for reconstruction of river public property board on the basis of Catasto terreni</p> <p>- Classification protocol and georefering of hydraulic works and characterization of hydraulic works and of river vegetation</p> <p>- Specification for relief of vegetation and habitat in wood areas and in semi-natural areas.</p> <p>- Specification for geomechanics surveys and tests for banks characterization.</p> <p>- <u>Specification for elaborates delivery (paper and numeric base)</u></p>	<p>• water budget.</p> <p>Activities for Water Framework Directive Implementation in Po basin</p> <p>• report art. 5</p> <p>• feasibility study for economic analysis of water uses in Po basin</p> <p>• relazione studio approfondimenti idrico I^ livelli</p> <p>• experimentation of the WFD evaluation system for ecological status on Ticino river</p> <p>• water bodies type classification (surface waters, groundwaters, transitional water, coastal water)</p> <p><u>In progress.</u></p>			

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Basin Authority	ACTIVITIES THEMES					
	Landslide	Floods	Water	Environment	Coast	Other
Po River		<p><u>Project in progress:</u> <u>Progetto Po</u> Agreement protocol for protection and valorization of territory and promotion of population security in Po Valley. Signed on 27/5/2005 by Consulta delle Province rivierasche del Po and Autorità di bacino</p>				

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Basin Authority	ACTIVITIES THEMES					
	Landslide	Floods	Water	Environment	Coast	Other
Serchio River	<p><u>Piano straordinario per la rimozione delle situazioni a rischio idrogeologico più alto</u> Adopted with deliberation of Institutional Committee n. 88, 27/10/1999.</p>	<p><u>Piano straordinario per la rimozione delle situazioni a rischio idrogeologico più alto</u> Adopted with deliberation of Institutional Committee n. 88, 27/10/1999.</p>	<p><u>Progetto di Piano di Bacino, stralcio "Bilancio idrico del bacino del lago di Massaciuccoli"</u> Adopted with deliberation of Institutional Committee n. 150, 20/02/2007.</p>	<p><u>Piano stralcio relativo a "Fabbisogno materiali litoidi e cave"</u> Adopted as plan project with deliberation n. 48, 31/10/1995, and n. 58, 29/01/1996, of Institutional Committee and as sub-plan with deliberation of Institutional Committee n. 83, 14/10/1998.</p>	<p><u>Misure di salvaguardia vigenti</u> "Adoption of safeguard measures on the basis of law 183/1989, Art. 17, comma 6-bis, for salty water intrusion control in coastal area of Serchio basin and and in Massaciuccoli lake." <u>Deliberation of Institutional Committee n. 128, 03/03/2004.</u></p>	<p><u>Misure di salvaguardia vigenti (subsidenza)</u> "Adoption of threshold target for piezometric level in Lucca Plain in order to mitigate subsidence effects." <u>Deliberation of Institutional Committee n. 130, 03/03/2004.</u></p>
	<p><u>Piano Stralcio Assetto Idrogeologico</u> Approved with deliberation Tuscany Regional Council n° 20 1/02/2005.</p>	<p><u>Piano Stralcio Assetto Idrogeologico</u> Approved with deliberation Tuscany Regional Council n° 20 1/02/2005.</p>	<p><u>Progetto di Piano stralcio relativo alla "Qualità delle Acque del Serchio"</u> Adopted with deliberation of Institutional Committee n. 49, 31/10/1995.</p>	<p><u>Misure di salvaguardia non vigenti</u> - Safeguard measures of coastal aquifer from any kind of discharge, especially from marble sand discharge deriving from area around Massaciuccoli lake. - Regulation of material extraction from river bed and from the potential flooded areas or river pertinences areas.</p>		
	<p><u>Misure di salvaguardia non Vigenti</u> - Safeguard measures of Sub-plan for Hydrogeologic Risk adopted - Safeguard measures for removal at highest hydrogeologic risk situations.</p>	<p><u>Misure di salvaguardia non Vigenti</u> - Safeguard measures of Sub-plan for Hydrogeologic Risk adopted - Safeguard measures for removal at highest hydrogeologic risk situations. - Safeguard measures for reduction of flood risk and to guarantee plan implementation.</p>	<p><u>Misure di salvaguardia vigenti</u> - "Criteria for definition of minimum stream flow in Serchio basin (Law 183/89, D.Lgs. 275/93, Law 36/94, D.Lgs. 152/99)". Deliberation of Institutional Committee n.121, 1/09/2002, n. 152, 20/02/2007, and n. 156, 19/06/2007 - Safeguard measures of Sub-Plan Massaciuccoli lake.</p>			

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Basin Authority	ACTIVITIES THEMES					
	Landslide	Floods	Water	Environment	Coast	Other
Tevere River	<p><u>Piano stralcio di assetto idrogeologico (l. 365/00):</u> Approved with D.P.C.M. 10/11/2006, published in G.U. n. 33, 09/02/2007.</p> <p><u>1° Stralcio Funzionale - PS1 - "Aree soggette a rischio di esondazione nel tratto Orte - Castel Giubileo"</u> Approved with D.P.C.M., 03/09/1998</p>	<p><u>Piano stralcio per la programmazione e l'utilizzazione della risorsa idrica superficiale e sotterranea (bilancio idrico- d.lgs. 258/00)</u> In progress</p> <p><u>Piano stralcio dell'Alto Tevere</u> In progress</p> <p><u>Realized studies to support sub-plan</u> Study about groundwater study in Tevere Basin.</p> <p>Mathematic model for integrated management of water systems</p> <p>Mathematic model for definition of hydrodynamic trend of lake Piediluco and mathematic model for phenomenons of eutrophy and dystrophy related to Piediluco lake.</p> <p>Bio-monitoring of terminal reach of Tevere and Aniene</p>	<p><u>Piano stralcio degli aspetti ambientali del Bacino</u> In progress</p> <p><u>Piano stralcio per il tratto metropolitano del Tevere da Castel Giubileo alla foce</u> Adopted by Institutional Committee the 31/07/2003</p> <p><u>Piano stralcio per la salvaguardia delle acque e delle sponde del Lago di Piediluco</u> Approved with D.P.C.M., 27/04/2006 Published in G.U. n. 233. 06/10/2006</p> <p><u>Piano stralcio del Lago Trasimeno</u> Approved with D.P.C.M., 19/07/2002 Published in G.U. n. 203, 30/08/2002</p> <p><u>Attività di monitoraggio dei piani:</u> Environmental Observatory or Trasimeno lake</p> <p>Tachinical group for Piediluco lake.</p>	<p><u>Piano stralcio per la fascia costiera</u> In progress</p>	<p><u>"Addressing document for navigation and to allow uses of river reaches or river pertinences from Castel Giubileo to sea"</u> (may 2007)</p> <p><u>"Hydraulic setting of medium Tevere Valley and indication for whole basin - Document of the activities"</u> (may 2003)</p>	<p><u>Piano stralcio di assetto idrogeologico (l. 365/00):</u> Approved with D.P.C.M., 10/11/2006 Published in G.U. n. 33, 09/02/2007</p> <p><u>1° Stralcio Funzionale - PS1 - "Aree soggette a rischio di esondazione nel tratto Orte - Castel Giubileo"</u> Approved with D.P.C.M., 03/09/1998.</p>

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Basin Authority	ACTIVITIES THEMES					
	Landslide	Floods	Water	Environment	Coast	Other
		Fish population study in terminal reach of Tevere Fish population study for definition of minimum stream flow in Tevere basin. Evaluation of water quality status using macrofite as bio-index.				

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