Common Implementation Strategy
Working Group 2B: Drafting Group ECO1

Information Sheet on Assessment of the Recovery of Costs for Water Services for the 2004 River Basin Characterisation Report (Art 9)

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Prepared by DG eco 1

1 INTRODUCTION

This information sheet has been produced by France/UK/Commission on behalf of Drafting Group ECO1 under the auspices of Working Group 2B of the Common Implementation Strategy. The objective of Drafting Group ECO1 is to provide support to further implementation of the WFD through practical advice, material and examples to help practitioners implement the requirements of the Directive in relation to the 2004 river basin characterisation, required under Article 5. This sheet is intended to support practitioners undertaking the assessment of the recovery of costs for water services as part of the 2004 characterisation exercise.

The information sheet builds on the WATECO guidance published in 2002. WATECO, which was developed as a "living document", provides extensive guidance and background on the full range of economic analysis required for the Directive. The information sheet focuses on "what to do" and "how to do it" in regard to meeting the obligations of Article 5. It is not a comprehensive guide on compliance with Article 9. As with the WATECO guidance this information sheet is not legally binding. The paper is structured as follows:

Section 2 gives background on Article 9 on recovery of costs for water services.
Section 3 focuses on the need for 2004 assessment of cost recovery and the outputs required.
Section 4 addresses the first output: assessment of cost recovery.
Section 5 addresses the second output: assessment of the incentive properties of current prices.
Section 6 addresses the third output: identification of information and knowledge gaps.

2 ARTICLE 9: THE NEED TO IMPLEMENT COST RECOVERY AND INCENTIVE PRICING BY 2010

Article 9 of the Directive establishes the requirement to implement cost recovery and incentive pricing by 2010. The key points of Article 9 are:

Member States shall: "take account of the principle of recovery of the costs of water services, including environmental and resource costs, having regard to the economic analysis conducted according to Annex III, and in accordance in particular with the polluter pays principle."

Member States are to ensure that by 2010: "water pricing policies provide adequate incentives for users to use water resources efficiently, and thereby contribute to the environmental objectives of [the] Directive".

Also by 2010, Member States are to ensure: "an adequate contribution of the different water uses, disaggregated into at least industry, households and agriculture, to the recovery of the costs of water services, based on the economic analysis conducted according to Annex III and taking account of the polluter pays principle."

Member States should report in the River Basin Management Plans on the planned steps towards implementing incentive based water pricing policies and the recovery of the costs of water services.

Member States may: "have regard to the social, environmental and economic effects of the recovery as well as the geographic and climatic conditions of the region or regions affected."

Implementing Article 5 will contribute to giving effect to Atricle 9. Aspects of Article 9 which are relevant to the economic analysis include:

What constitutes "adequate incentive pricing" and what form should incentive pricing take?

What is the meaning of an "adequate contribution of the different waters uses" to the costs of water services? How to assess these contributions?

What does Polluter Pays Principle mean in the context of cost recovery; what will influence the extent to which Member States need to "take account" of it; and how should it be taken into account?

Be alert!
Not all of these questions need to be answered for 2004.
Full cost recovery is not a necessary requirement of the WFD.

3 THE NEED TO REPORT ON COST RECOVERY IN 2004

The need to report on cost recovery in 2004 is established by the requirements of Article 5 on river basin characterisation and the reference there to Annex III. Specifically, Annex III states that the economic analysis carried out as part of the 2004 river basin characterisation should contain sufficient detail to: "Make the relevant calculations necessary for taking into account under Article 9 the principle of recovery of the costs of water services". For the 2004 report an assessment of the current extent of cost recovery and incentives is required along with identification of information and knowledge gaps. From this basis further studies and other work can be initiated ahead of 2010. The assessment must be completed by 22nd December 2004 and reported to the Commission by 22nd March 2005.

The key issues!
The main issues for the 2004 assessment of cost recovery are to assess:
the current extent of cost recovery for water services; and
the level of cross-subsidies between different water uses in paying for water services.
This provides a first stage in assessing sustainability of the provision of water services and a basis for the implementation of the Polluter Pays Principle, both key objectives of the WFD.

Two principal outputs are required for 2004:

An assessment of the current level of cost-recovery.
Identification of gaps in the information and knowledge base and proposals for addressing these taking account of the need to report at the RBD after 2004 and given the usefulness of the cost recovery data for later analysis.

In addition to this, Member States may want to implement a review of the incentive pricing properties of the current pricing regime. This is not a strict requirement for 2004. It is needed ahead of 2010 as part of the full implementation of Article 9 but Member States may consider it worthwhile to undertake some or all of this as part of the 2004 exercise, dependent on their own circumstances and available data. If this work is not undertaken for 2004 then it can be addressed as part of the identification of gaps in information and knowledge.

Remember!
Be pragmatic: For 2004 the assessment only requires the use of existing data. The 2004 assessment does not necessarily require Member States to collect new data.
It is important to bear in mind that existing data is typically associated with methods and approaches used to generate and deploy it. As such practitioners must exercise caution when seeking to use existing data out of the content in which it was generated or is normally used.
An exhaustive approach may lead to "death in good health".
The assessment of cost recovery for 2004 can use simplifying assumptions and proxies.
A key aspect of the 2004 work is to identify missing data and set out a work programme ahead of the 2010 implementation deadline.
Transparency is a WFD requirement and important for the 2004 assessment of cost recovery.

4 ASSESSMENT OF THE CURRENT LEVEL OF COST RECOVERY

In the WATECO guidance seven tasks are identified in order to undertake this assessment:

Define the water services.
Identify providers, users and polluters.
Calculation of financial costs of the water services.

Identify and estimate the environmental and resource costs.
Identify the cost recovery mechanism.
Calculate the rate of cost recovery.
Identify the allocation of costs to users and polluters.

4.1 Task 1: Define the water services

Key outputs from this task! Decision on which water services to include in the assessment. Decision on the scale of the assessment.

4.1.1 Defining water services

Water services are defined in Article 2 of the WFD as: “all services which provide, for households, public institutions or any economic activity: (a) abstraction, impoundment, storage, treatment and distribution of surface water or groundwater; (b) waste water collection and treatment facilities which subsequently discharge into surface water.” Water services are seen as intermediaries between the natural environment and actual water use.

Neither the Directive nor WATECO provides a categorical specification of what should be included for 2004. The key point is to link the water services included in the assessment with the findings of the pressures and impacts study. In other words, the appropriate water services to include in the assessment are those that are identified in the pressures and impacts study as having a significant impact on the status of water bodies.

Be alert! Neither the Directive nor the WATECO guidance provides an exhaustive definition of water services. According to the pressures and impacts analysis, the competent authority has to identify water services in the basin river district. Practitioners should establish links with the pressures and impacts study.

The Directive doesn’t specify if the services to include are public or private and if they include or exclude self supply services. The key point is the link with the pressures and the impacts study. However the WATECO guidance document (page 4, Annex II.III) states that: “To achieve maximum transparency, to ensure equitable and effective treatment vis-à-vis the internalisation of environmental and resource costs, and to preserve competition between economic sectors, water services should, where necessary, include both services provided by third parties and self-services.”

So, which water services should be included for 2004? As a minimum it is recommended that public water and wastewater services should be included. These services might be provided by a public institution (e.g. water board, water authority, municipality) or a privatised (or part-privatised) company appointed and regulated by the state or municipality, e.g. through a concession agreement. Member States can consider further water services in conjunction with the pressures and impacts study. Where other water services are highlighted as having a significant impact on water status then Member States will need to consider their inclusion in the 2004 assessment… …But remember that the 2004 assessment should be based on pragmatism and the use of existing data. The Member State should explain its approach to defininig water services as part of the 2004 assessment. Where water services with significant impacts are excluded from the 2004 assessment then it will be necessary to explain the reasons for this and to include the assessment in the post-2004 work programme.

4.1.2 Determining the geographical scale of the assessment?

The Directive specifies that the assessment of cost recovery and incentive pricing is required at the river basin district scale for each category of water services that have been identified. For international river basins, the assessment of cost recovery would be done for each national part of the district. Reporting on cost recovery at the river basin scale is likely to entail aggregating or disaggregating data from other scales. In particular, financial costs and revenues will typically be collected at the water service area, which will not necessarily perfectly coincide with the river basin. On the other hand, other information on water uses and on pollution should be derived at the river basin district level for the river basin characterisation, through the economic analysis of water use and pressures and impacts studies. Some of these data will also be available at the water service area, e.g. for users of the water service, although pollution impacts may not currently be available at the water service area. Comprehensive, basin wide, estimates of environmental and resource costs would need to be derived if the Member State decides that it is appropriate to undertake this for 2004.

Not all assessments will necessarily be possible at the district scale for 2004. For example, the current level of knowledge on environmental and resource costs may be insufficient to enable basin wide estimates to be undertaken for 2004. Therefore, for 2004, assessment of cost recovery at a national or water service level would be sufficient. However, any assessment that is undertaken at the national or water service level needs to be as transparent as possible and further effort will be required to define a work plan for to work towards a river basin district assessment post-2004.

Where there are, or are expected to be, significant environmental issues or derogations it would already be useful to undertaken river basin or sub-basin assessment of cost recovery for 2004. This would provide a baseline for the further analysis and help in the later assessment of disproportionate costs and in defining programmes of measures. However, failure to provide a basin or sub-basin level assessment of cost recovery in 2004 would not by itself affect derogation decisions.

So, what scale to use for 2004?
Identify the current scale and availability of:
information on financial costs and revenues;
information that will be provided by the economic analysis of water use and pressures and impacts studies; and
information on environmental and resource costs.
Decide on the appropriate scale for the 2004 assessment. This should be informed by a consideration of:
the scale of current information;
the effort required to re-aggregate information from one scale to another;
the significance of environmental issues in the rive basin; and
the resources available for undertaking the assessment of cost recovery.
Reporting on cost recovery for 2004 (Article 5) will be done mainly with existing data (Article 15) depending on the scale of their current availability and the institutional structures for provision of water services, financing and data collection (e.g. basin level, national level, water service or municipal scale).
It is for MS and their interested parties to judge the appropriate scale of analysis given the usefulness of the data (including transparency of methods),
However, after 2004 the Directive requires at least river basin district level reporting.

4.2 Task 2: Identify providers, users and polluters

Key outputs from this task!
Decision on which water uses to include in the assessment.
Identification of the specific providers of water services.
Identification of the users.
Identification of polluters causing costs to the water service.
Identification of which uses generate the costs of the water services.

4.2.1 Identification of the providers

The providers are the water services and it is necessary to identify the specific water service organisations to include – within each river basin as appropriate – following from task 1. For public water supplies and wastewater collection and treatment, there may be a single organisation providing all stages of the services (e.g. abstraction, impoundment, storage, treatment and distribution of surface water or groundwater) or different organisation may be responsible for different stages. The organisation(s) involved can be public bodies (e.g. the local municipality) or private water service companies. For example with regard to provision of water services, in Spain the river basin authority is responsible for abstraction, impoundment and bulk transport of water whilst municipalities and regional governments are responsible for treatment and distribution. In England and Wales single, privatised, water companies are responsible for all of these stages.

Data on self-services, such as agricultural abstraction and private water supplies and wastewater treatment (employing septic tanks or cesspools) may be difficult to identify as there may not be a comprehensive dataset available on numbers of services, locations, volumes, etc. In such instances, and where self-services are deemed by the Member State to be relevant to be included in the cost recovery assessment for 2004, it may be sufficient to make estimates. These estimates could form the basis for further work post-2004.

4.2.2 Identification of the water users

Water use is defined in Article 2 as: "water services together with any other activity identified under Article 5 and Annex II having a significant impact on the status of water. This concept applies for the purposes of Article 1 and of the economic analysis carried out according to Article 5 and Annex III, point (b)." Article 9 of the Directive specifies that the water uses should include at least households, agriculture and industry. Therefore these three categories need to be reported on for 2004.

For the 2004 assessment it is not strictly necessary to disaggregate these categories, for instance into different types of industry – although if the existing data facilitate this and the Member State considers this worthwhile then it could provide a richer picture. Post-2004 more assessment at a disaggregated level, as part of the assessment of water pricing and programmes of measures, may be required but this need have no necessary bearing on what is undertaken for 2004.

It may be necessary to include other water uses in the 2004 assessment. The relevance of other uses will stem from the river basin characterisation, which will identify activities having a significant impact on water status and assess the related pressures and impacts.

What are the key data that could be collected?
Population covered by the water service, e.g. wastewater treatment works .
The number of household, industries, farmers using an impoundment.
The volumes abstracted in the river, the aquifer, the dam by the different types of users (households, industries).
Number of household, industries connected to the public water supply.
Number of household, industries connected to a waste water treatment plan.
Volumes of wastewater treated.

So, which water uses should be included for 2004?
From the Directive, the minimum requirement is to include: households; agriculture; and industry.
Member States can consider the inclusion of additional activities in conjunction with the pressures and impacts study and the economic analysis of water use carried out under Article 5. Where other activities are highlighted as having a significant impact on water status then Member States will need to consider their inclusion in the 2004 assessment…
…But remember that the 2004 assessment should be based on pragmatism and the use of existing data.
Where activities with significant impacts are excluded from the 2004 assessment then it will be necessary to explain the reasons for this and to include the assessment in the post-2004 work

programme.

4.2.3 Identification of the polluters

An important part of the assessment of cost recovery relates to recovery of costs of pollution treatment or control incurred by water services. The costs that users currently pay may not be in proportion to the costs they give rise to. For example, industrial activities may (currently or historically) deleterious effects on water quality necessitating enhanced levels of treatment for public water supply. It is therefore essential to identify the activities that give rise to pollution in each river basin. These data should be forthcoming from the pressures and impacts study. In some cases it may be necessary to augment the pressures and impacts study in order to ascertain the responsible water use for historical pollution. The presence and intensity of the water use within the river basin district may have altered significantly or declined since historical pollution occurred. However, because of the capital intensive nature of the water industry with long-lived assets historical pollution may have given rise to capital investment which is still being paid for today. In other words, there are differential lags in water use and pollution in respect of the investment and financing of water services.

Such divergences should be identified in order to properly account for the costs of water services. However, since these data may not be readily available from the pressures and impacts study it may be necessary to undertake further analysis. For the purposes of the 2004 assessment such further work may not be achievable or worthwhile. However, where information and knowledge on the history of water use, pollution and cost arisings is known then this can be used to delineate the sources of pollution more accurately. In the absence of detailed information the practitioner may employ expert judgement if the Member State considers this to be a material issue in the river basin district. Further analysis on the historical arisings of pollution is recommended as part of the post-2004 work programme.

4.3 Task 3: Calculation of financial costs of the water services

Key outputs from this task!
Information on the financial costs of the water services identified in task 2.

4.3.1 Which cost components to include?

The financial costs of water services are the costs of providing and administering these services. It is recommended to ensure that the following components are included in the assessment as appropriate:

Operating and maintenance costs. These costs are those that relate to providing the service and include, amongst others, employment costs, energy costs, chemical costs and the costs of employing third parties. Maintenance costs relate to keeping the assets in serviceable condition throughout their economic life.

Capital costs. These are the costs of the principal and interest payments (and cost of capital as appropriate) associated with expenditure on assets that is externally financed through loans, bonds, equity and also other financial mechanisms. The treatment of depreciation is a complex issue and the treatment of this will vary across water services within Member States as well as between Member States. Different organisations have different depreciation policies, e.g. based on historical cost or replacement value, and different depreciation timescales. For 2004 the requirement is to use existing data and to ensure maximum transparency. Therefore, it is necessary to set out clearly how depreciation, including the valuation of capital values (accounting or economic methods) are treated in financial costs and how this affects cost recovery.

Administrative costs. These relate to the costs of regulating the water service, e.g. through a water abstraction licensing system. Be sure that these costs are identified and included, since there

are often more costs and organisations involved in the provision of water services than the one that is directly responsible for the act of providing the supply of water to or collecting wastewater from a user. For example in England and Wales the privatised water companies pay for licences for water abstraction and wastewater discharge which cover the environment agency's costs for carrying out their regulatory duties in these areas. The licence charges form part of the bills to water customers.

Taxes & subsidies It is important to distinguish general taxes from those used to correct for externalities, e.g. environmental taxes. For the article 5 report general taxes should at least be clearly identified in the financial costs with a separate identification of those related evironmental taxes. Later analysis of cost recovery based on the economic rather than financial costs would need to remove general taxes and other transfers but retain those related to environmental damages. Subsidies can take a range of forms, being direct or indirect. Subsidies can be in the form of direct investments from other levels of government or straightforward payments or grants from, for instance, Europe, central government or the municipality to the service provider. These could be related to capital invesments and/or operating expenditures. They can take the form of soft loans and accelerated depreciation allowances and such subsidies are not always easily identifiable. It is therefore recommended that Member States ensure that the appropriate financial and economic expertise is applied to the analysis of water service provider financial costs for the 2004 assessment and that the analysis undertaken is clearly explained. In addition to the subsidy payments that may be made to water service providers cross-subsidy between users (i.e. households, agriculture, industry) can also occur. This is addressed further below as part of task 7.

Example: Financial costs in the Seine-Normandy river basin for self-supply in irrigation
This example illustrates the reporting of financial cost data for irrigation in the assessment of cost recovery undertaken for the Seine-Normandy river basin. A key point of this example is that depreciation costs for capital assets are includes in the annual operating costs. In itself this is not an issue for the 2004 assssment, however it is important to note that the pracitioners in this exercise are reporting how depreciation / capital costs are financed.

Types of financial costs	Description	Values	Comments
Operating costs	Running costs: a) abstraction b) watering c) abstraction fee	 0.08 euro/m^3 0.002 to 0.02 euro/m^3 0.01 euro/m^3	Energy represents a large part of the costs
Capital costs	Depreciation cost included in running costs	Main equipment: 780 to 950 euro/ha Mobile equipment: 15 to 1500 euro/ha	Depreciation: 15 years for main equipment 10 years for flexible tubes
Total costs		0.092 to 0.11 euro/m^3	

Source: Study for some typologies of irrigated farms undertaken by the Agence De L'Eau Seine-Normandie.

4.3.2 Where do the financial data come from?

The sources for the financial data for the 2004 assessment could include:

Federal and regional statistical offices.
Local authorities/municipalities.
Private companies (e.g. concession companies).
Data from environmental agencies.
Research data from universities.
Expert judgement.
New surveys on costs commissioned – though recall that the 2004 assessment need only employ existing data.

Annual accounts of the water service providers should be the basis for the collection of the financial information. The accounts should typically also report revenue, tax and subsidy information, facilitating assessment of financial cost recovery. For some providers of water services the

accounts may be consolidated across multiple services or cover multiple uses (e.g. dams that provide water for households and agriculture). In these cases, unless the accounts give a breakdown or if no other information is available from the water service, or other organisation, then separate analysis and/or expert judgement will be required to disaggregate the costs. In all cases the procedures and approaches for allocating costs should be set out.

Good practice on collecting and reporting cost data for 2004!
Use annual accounts and federal, regional and municipal financial/statistical data for as far as possible. Report the sources of the data.
When data have to be converted or missing data estimated then clearly set out the basis for this.
Identify and report any uncertainty in the data.
Identify and report the base year for the data. The most recent complete financial or calendar year should be used. Different providers will employ different financial reporting periods. It is advised to keep these data separate for as far as possible and report on cost recovery separately for each separate provider.
It is recommended to collect and report data for at least the most recent three years to reveal any anomalies and demonstrate that there is a broad consistency in financial costs, or that any trends can be explained.
Re-basing of the data needs to be done judiciously: use the Retail Price Index and/or any specific indices relevant to the construction sector (for capital expenditure). Report any re-basing that has been carried out.
It is not necessary to have an exhaustive view of all existing external subsidies or cross subsidies. The aim is to identify the significant subsidy.
Be pragmatic: Only existing data need to be used for the analysis.
Be alert!
Different Member States and organisations within Member States either have their own Generally Accepted Accounting Principles (GAAP) or make their own interpretation of these.
The aggregation of the costs for different organisations responsible for different elements of the water service can be difficult because of GAAP. In these cases it may be best to keep the assessment of cost recovery separate for each separate organisation for 2004.

Illustration from the Netherlands

In the Netherlands, for example, the Central Government is traditionally responsible for the management of the main rivers (e.g. Rhine, Meuse), while the water boards are responsible for the management of the regional water system. Information about these management costs, the way they are financed and the scale to which this information relates can be obtained from the Central Government and the water boards respectively.

4.3.3 Converting data from the water service level to the river basin scale

Converting data to the river basin district level can be complicated. For instance, as well as determining the populations connected in each district it may be necessary to disaggregate the water service assets and costs from the service level to the district. Undertaking detailed analysis on this may not be appropriate for 2004.

For 2004, applying simple ratio based adjustments is sufficient. For example, if a water service covers two districts then it is necessary to have a means for breaking down the financial costs to each district. The estimate of the proportion of total population served in each district provides the basis for this. Such an approach is quick and easy to undertake but risks misallocating costs which are not wholly related to population served. However, for 2004 such an approach is appropriate if the assumptions are made transparent. Further detailed analysis can be undertaken post-2004.

4.4 Task 4: Identify and estimate the environmental and resource costs

Key outputs from this task!
Where appropriate, identification and estimation of the environmental and resource costs

associated with the water services.
In the absence of data to underpin monetary estimation of the environmental and resource costs qualitative description may suffice.

Information on the environmental and resource costs caused by water services is not collected systematically by Member States. Undertaking new studies to collect this data is complex, time consuming and expensive. Therefore, it does not necessarily need to be undertaken for the 2004 assessment. However, it would be useful if the environmental and resource costs of water services could be estimated by drawing on existing data. However, caution needs to be exercised if this is undertaken and all assumptions and uncertainties should be clearly explained. Where monetary valuation of the environmental and resource costs is not possible because of a lack of existing data then it would be useful for Member States to identify and describe the effects in qualitative terms, though this does not provide data useful to the calculation of the rate of cost recovery.

Further information on calculating environmental and resource costs is available in the Information Sheet on environmental and resource costs prepared by Working Group 2B: Drafting Group ECO2.

Example : assessment of mitigation costs in France

Mitigation costs are a part of the environmental costs. They are paid by the users of water supply services to mitigate the impact of the pollution.

This insert presents first assessments of over costs of water supply treatment related to pollutants.

Knowing annual treated volumes, the over cost related to pollution can be assessed and shared out versus pressures due to each economic sector.

Mitigation costs

Over cost* of water treatment with

- **Nitrates :** **0.29 à 0.34** €/m³
- **Pesticides :** **0.063 à 0.072** €/m³
- **Eutrophication : 0.16 à 0.24** €/m³

*** first assessment**

Illustration from the Netherlands

In the Netherlands, the calculation of environmental costs, including those related to water, are based on a methodology, which was agreed upon by different Ministries, including the Ministry for the Environment (VROM) and the Ministry for Water Management (Verkeer en Waterstaat), in 1998. Environmental costs are those costs which are directly related to measures whose primary aim is to protect the environment, in this case the aquatic environment. These costs are calculated

annually by Statistics Netherlands for agriculture, industry and water boards. In 2000, the environmental costs incurred for water were 30 million euros for agriculture, 373 million euros for industry and 936 million euros for the Dutch water boards. Most of these costs relate to waste water collection and treatment.

4.5 Task 5: Identify revenues and the cost recovery mechanism

Key outputs from this task!
Description of the institional arrangements for cost recovery for the water services included.
Description of the means of recovering costs – e.g. through prices, transfers.
Specification of the revenues to the water service.

This task requires practitioners to identify the mechanisms by which costs for water services are recovered. In general this is expected to be some form of user charges/tariffs. However, subsidies or other transfers could be the means by which water service providers are compensated for the service provision. In conjunction with describing the cost recovery mechanism is the need to provide an account of the institutional structure for water services. In task 2 the providers and users are identified and this may form the core of describing the institutional structure. In addition to this, Member States may describe, if relevant, the main price setting process and regulatory structures for water services.

Finally, if data on revenues to the water service providers has not already been collected (e.g. through task 3) then it should be collected at this stage.

Illustration from the Netherlands
In the Netherlands, the water boards have traditionally been responsible for wastewater treatment. Based on the Polluter Pays Principle, households and industry pay a pollution levy since the introduction of the Surface Water Pollution Act in the Netherlands in 1970.

4.6 Task 6: Calculate the rate of cost recovery of economic costs

The overall cost recovery of economic costs is the extent to which the costs of providing the water service is covered by charges to water users and other cost recovery mechanisms. Cost recovery can be reported in a variety of ways. For example:

Cost recovery rate = total revenues - subsidies / total costs x 100; or
Cost recovery rate = price per unit - subsidies / cost per unit x 100.

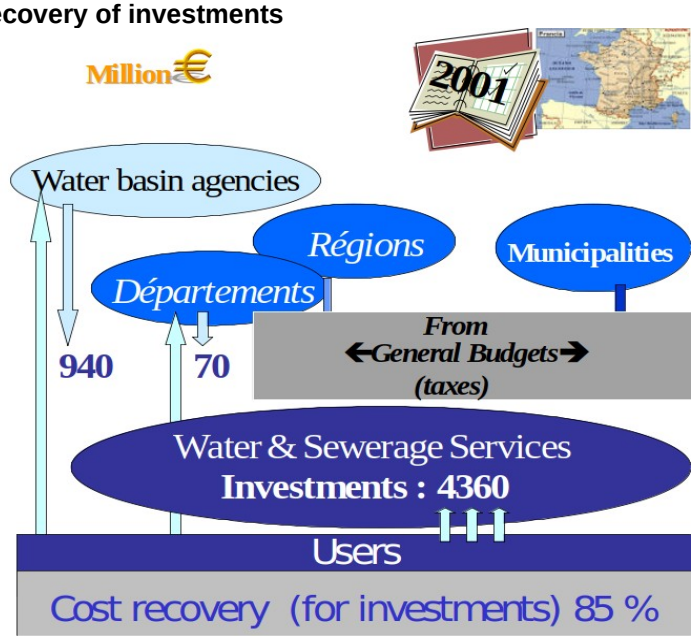
Example: cost recovery in France for water and wastewater services
Each year, the French Committee for National Environmental Accounts chaired by the minister in charge of the environment approves and publishes the environmental expenditures.

> *These accounts are setting up starting from data of the national statistics and investigations carried out by the companies. The definition of the methods of calculation of the costs of the water services by district was thus carried out on the basis of this work in order to have a coherence of the methods and data.*

It is obvious that the national statistics will not be able to provide the whole of the relevant data. Two enhancements are necessary :
The first is the improvement of the national surveys. This work will be begun within the framework of the Environment Committee of the National Council of the Statistical Data
The second is the setting up of specific investigations to the district scale. These investigations should supplement the national data and gather information on the significant water management issues identified in the river basin.

Reporting for 2004 will include the evaluation of current cost recovery level. In France, water services and sanitation are organized by municipalities. There are about 18000 water supply services and 16000 sewerage services.

1° cost recovery of investments



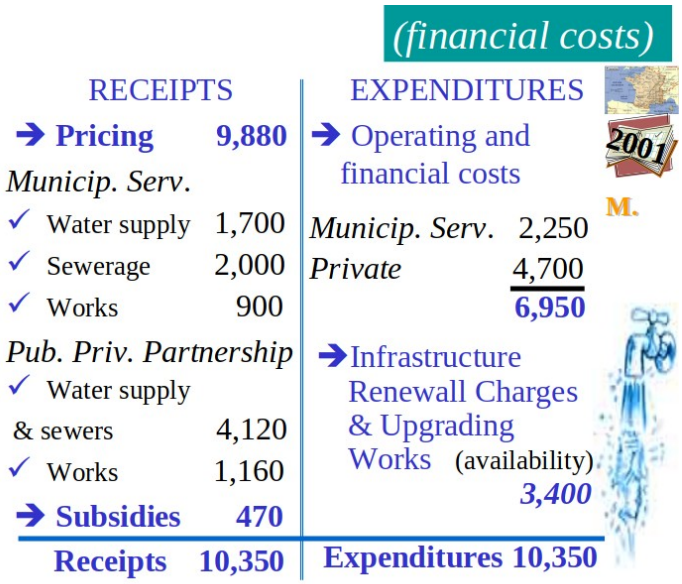
The first aim of cost recovery reporting is to evaluate subsidies for investments.

It shall be necessary to identify subsidies which are paid by environmental taxes on water uses (water agencies) and subsidies paid by general taxes on activities or housing.

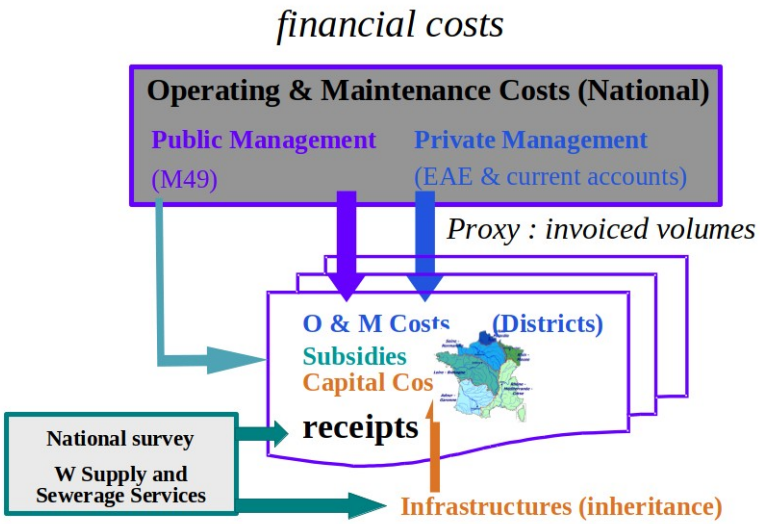
The cost recovery for investments on water pricing is about 85%

2° cost recovery on Operating, Maintenance and Capital Costs

The data for the current cost level assessment come from
the database of the National Reporting for Water Services Accounts (M49) for the municipally run services.
the National Administrative Survey on Firms for the private services .
These database assess Operating, Maintenance and Financial Cost.
The National Statistical Survey on Water Services and Sewerage Services (total receipts)
The whole receipts are 10,350 million of euros. The cost recovery on water pricing is nearby 96%.

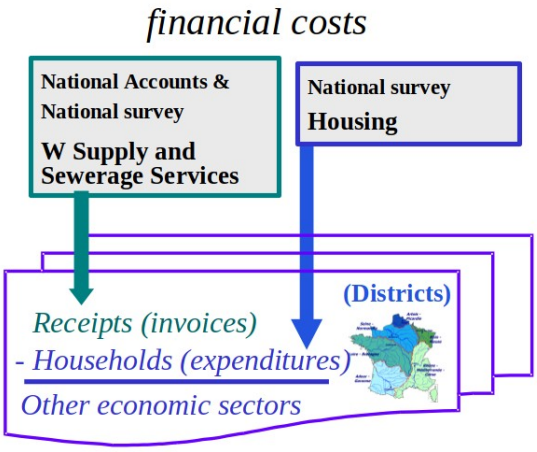


The total receipts are about 150% of Maintenance and Operating Costs. This difference allows to set up and to renew infrastructures.



Disaggregation at a district scale will be made on the basis of invoiced volume by water and sewerage services.

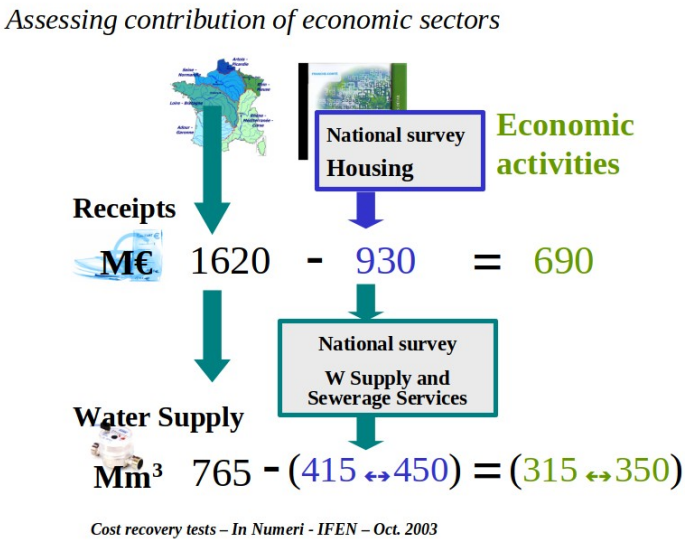
3° Contributions of households and other economic sectors



National Accounts and National Statistical Survey of WS allow to assess the receipts from water pricing.

The proxies to desegregated at a district scale are volumes and average prices in each district.

On the basis of the National Statistical Survey on Housing database, the households expenditures could be assessed.



This insert presents the results of a first assessment of the contributions of households and economic sectors to the recovery of financial costs in the Loire-Brittany district. In a first step, receipts and invoiced volumes are assessed for the whole district disaggregating national data (see above).
In a second step, the households expenditures are assessed on the basis of the National Statistical Survey on Housing. Knowing the average water price in the district, the water consumption by households is calculated. By difference, receipts and water consumption of economic sectors are calculated. At this time, no relevant data is available to separate industrial and agriculture sectors.

Data : Service statistique du ministère de l'écologie et du développement durable (pour Commission des Comptes et de l'Economie de l'Environnement) ; Projet de loi de finances 2003 – compte rendu d'activité des agences de l'eau –
Cercle Français de l'Eau, Quel financement pour la politique de l'eau de demain – colloque du 6 octobre 2003.

Example: Determining the revenue requirement in England and Wales to underpin cost recovery

This example illustrates the process of forecasting public water and wastewater service company revenue requirements in England and Wales as part of the regulatory process for achieving cost recovery.
In England and Wales the price setting regime for public water and wastewater services is regulated using price cap regulation. The economic regulator of the privatised water industry, Ofwat (Office of Water Services), sets the maximum amount of total revenue which the individual water companies can recover from their customers. The approach to price setting which the regulator takes ensures that the companies recover sufficient revenue to meet the financial costs of providing the water and sewerage services. Water company customers' bills pay for the full costs of financing all activities to maintain and improve the assets and provide the services over the long-term. These costs and hence the revenue which the companies require are calculated as follows:

Revenue requirement = Operating expenditure + Current Cost of Depreciation + Infrastructure Renewals Charge + Return on Capital + Tax
The operating expenditure covers the day to day running costs of providing the service.

The costs of maintaining the assets are reflected through the current cost depreciation (CCD) and infrastructure renewals charges (IRC). The asset base is considered in two parts: non-infrastructure (or above ground assets such as treatment works) and infrastructure (or below ground assets i.e the networks of pipes). The current cost of depreciation (CCD) is calculated for non-infrastructure assets (generally, those assets above ground) and depreciation charges are based on current Modern Equivalent Asset value costs so that in each period consumers pay for the asset value used in the services supplied. The infrastructure renewal charge (IRC) applies to the costs of maintaining the underground assets. It is assumed that these assets do not depreciate and under this approach the infrastructure network is treated as a single asset to be maintained in perpetuity. An annual charge is made (the IRC) against water company profits for the annualised costs of maintaining the system at its current level of operations. The expenditure on infrastructure assets (infrastructure renewals expenditure: IRE) and the IRC should be in balance over the medium term assuming that the network is in a steady state regarding operational capacity.
The Return on Capital allows the companies to recover the costs of financing investment. The industry in England and Wales consists of a number of privatised companies. Investment is provided by both equity shareholders and lenders. The return on capital is calculated as a regulatory capital value (RCV) multiplied by a cost of capital. The cost of capital is a weighted average cost of both debt and equity. The RCV represents the total amount of investment made by the providers of finance in the company and is calculated as the value placed on each company's capital and debt by the financial markets following privatisation in 1989 adjusted for new investments to enhance and expand the network, maintenance expenditure for infrastructure and non-infrastructure assets, CCD, and IRC.

Example from the Netherlands
In the Netherlands, all water management costs are recovered, in principle, by charging the users of the services provided. Water pricing policy is, wherever possible, based on the beneficiary and polluter pays principle. The existing pricing and financing mechanisms of some of the main water services provided are summarised in the table below.

Pricing system	Pricing authority	Task(s) financed	Payers	Total costs (million €)	Total revenues (million €)	Cost recovery (%)
Pollution levy	Water board	Waste water treatment and water quality management	Households Agriculture Industry	1150	964	84
Sewerage levy	Municipality	Operation and maintenance of sewerage system	Households Agriculture Industry	885	697	79
Drinking water price	Drinking water companies	Drinking water supply, including production, purification and distribution	Households Agriculture Industry	1313	1445	110

Table: Summary of some of the main water pricing systems in the Netherlands (costs and revenues in 2000;,drinking water in 2002)

4.7 Task 7: Identify the allocation of costs to users and polluters

In order to be able to report on cost recovery by water use accurately it is necessary to be able to carefully define what proportion of financial costs are to deal with pollution (both operating & maintenance costs and capital costs) and also the generation of environmental & resource costs. The foundation for allocating the costs of water services to users and polluters is the pressures and impacts study and the data that may be collected through task 2 (see section 4.2.3). This study should highlight what proportion of total pollution is generated by different sources. This data can be used to adjust and/or allocate the total costs of water services. It will also be necessary to take into account any historical data on pollution as discussed above.

The level of detail that can be accomplished for the 2004 assessment will depend largely on the detail available from the pressures and impacts study and the ability to associate this to the cost data. For instance, the pressures impacts study might show that agriculture is responsible for 60% of water pollution in a basin. However, this does not mean that 60% of all the costs can be automatically attributed to agriculture. There is not necessarily a linear relationship between the level of pollution and the proportion of costs. In allocating costs of water services it will also be necessary to delineate joint costs. Careful analysis of the pressures and impacts study and the financial data for water services is required in order to attribute costs to different polluters.

Therefore practitioners will need to be able to determine which proportion of water service costs are caused by different water uses and polluters. This can be a time consuming and complex exercise. As such it may not be achievable for 2004 being pragmatic and using existing data; it may be necessary to use simple proxies (such as assumptions of linearity) or expert judgement for 2004, leaving more detailed analysis for post-2004. Overall this task in particular needs to be conducted sympathetically so that the incorrect levels of cost recovery by user or polluter are not reported which may give rise to erroneous policy prescriptions in the run up to 2010.

Example: cost recovery in Norway at the municipal level

This example illustrates the calculation of cost recovery at the municipal level in Norway. Environmental and resouce costs have not been estimated and financial cost only is calculated. The level of (financial) cost recovery varies markedly across the municipalities. The overall level of cost recovery is 70%, meaning that there is a significant degree of subsidy in place.

The chosen definition for the cost recovery in Norway is the municipal level ("KOSTRA"). The following table illustrates the accounting breakdown used by Norway to undertake the cost recovery assessment. For some small municipalities with only a small population data are not always available due to statistical confidentiality issues.

Accounts	Unit	Comment
Operating costs	€	
+ Maintenance costs	€	
+ Capital costs (not including environmental measures):	€	
depreciation	€	
opportunity cost	€	
+ Administrative costs	€	
+ Other costs	€	
= Gross financial costs (A)	€	
Water + WW service charges	€	Charges not generally differentiated by user
+ Net transfers (subsidies-other taxes)	€	Not included in KOSTRA. Confidentiality limitations
= Total income (B)	€	

Financial cost recovery (=B/A)	%	Suggested minimum reporting for 2004
Environment and resource taxes	€	Not relevant for municipal water services
+ Abatement and mitigation costs	€	Data from abatement action plans req.
+ Remaining environmental costs	€	Non-market valuation studies net of abatement
= total environment and resource costs (C)	€	
Full cost recovery (=B/(A+C))	%	Aim of reporting (2009)

Example: cost recovery in Norway at the municipal level

This example illustrates the calculation of cost recovery in the Numedalen river basin in Norway based on the Norwegian system for reporting of municipal services to the State (called KOSTRA). Environmental and resource costs have not been estimated and financial cost only is calculated. The data indicates that the level of (financial) cost recovery varies markedly across the municipalities in the river basin. The river basin average (financial) cost recovery is calculated to 70% for both water supply and waste water. However one should take into account that the municipalities have an opportunity to raise a fund to meet future investment needs that may not be included in . Therefore, looking at just one year can be misleading. Also, we have some examples of diverging calculations that might explain some of the differences.

The following table illustrates the accounting breakdown by the use of KOSTRA-figures to undertake the cost recovery assessment. For some small municipalities with only a small population data are not always available due to statistical confidentiality issues.

The exercise of the financial cost recovery has been undertaken for the municipalities of the Numedalslägen river basin for both water supply and waste water.

Water supply

Municipality	Water - financial cost recovery (%)	Water - charge basis (operating costs+capital costs) (1000€)	Income water charges (1000€)	Water - net operating costs (gross operating costs + indirect costs - other income) (1000€)	Water - total capital costs (depreciation + opportunity costs) (1000€)**
0604 Kongsberg	134	1 313	1 753	981	332
0631 Flesberg	45	201	91	131	70
0632 Rollag	0	24	0	-61	85
0633 Nore og Uvdal	45	402	183	162	240
0709 Larvik	100	5 340	5 349	1 931	3 409
0728 Lardal	39	631	247	154	477
0806 Skien	85	4 666	3 956	2 356	2 310
0807 Notodden	..	..	1 538	771	..
0811 Siljan	101	140	141	88	52
0822 Sauherad	81	383	310	156	226
0826 Tinn	..	..	622	499	..
Average Numedalslågen	70				
Total Numedalslågen		13 099	14 189	7 169	7 201
Note: Kr/Euro (2002)	7,5				

Source: KOSTRA (2002 data). Note: **linear depreciation

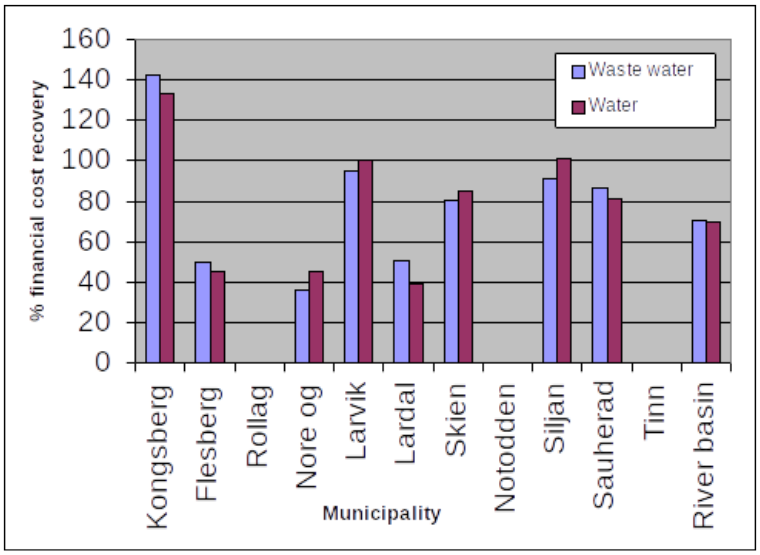
Waste water (WW) collection and treatment

Municipality	WW - financial cost recovery (%)	WW - charge basis (operating costs+capital costs)(1000€)	Income WW charges (1000€)	WW - net operating costs (gross operating costs + indirect costs - other income) (1000€)	WW - total capital costs (depreciation + opportunity costs) (1000€)**
0604 Kongsberg	142	1 870	2 661	939	931
0631 Flesberg	50	307	152	218	89
0632 Rollag	0	77	0	-6	82
0633 Nore og Uvdal	36	637	227	315	322
0709 Larvik	95	8 144	7 738	2 995	5 149
0728 Lardal	51	306	155	145	161
0806 Skien	81	8 048	6 485	3 722	4 326
0807 Notodden	..	..	1 929	1 293	..
0811 Siljan	91	240	219	157	82
0822 Sauherad	86	685	592	343	342
0826 Tinn	..	..	1 023	678	..
Average Numedalslågen	70				
Total Numedalslågen		20 313	21 183	10 800	11 484

Note: Kr/Euro (2002) 7,5
Note: **linear depreciation

The results are an average of 70% of financial cost recovery at the Numedalslägen river basin level

Financial cost recovery (municipalities in Numedalslågen River Basin)



Source: based on KOSTRA data (2002)

5 ASSESSMENT OF THE INCENTIVE PROPERTIES OF THE CURRENT PRICING REGIME

The WFD recognises pricing as a basic measure for achieving the environmental objectives. The implementation of incentive pricing is required by 2010. Reporting on the incentive properties of the current pricing regime is not a mandatory requirement for the 2004 assessment. However, undertaking this as part of the 2004 river basin characterisation exercise, in conjunction with the assessment of cost recovery, would be useful, particularly in basins with significant environmental issues or where derogations are likely.

If assessment of the current pricing regime is undertaken then the 2004 assessment could report on results of surveys on pricing (e.g. studies on alternative charging mechanisms) that may have been carried out nationally, at river basin district level or for specific water services or user groups.

6 IDENTIFICATION OF GAPS IN THE INFORMATION AND KNOWLEDGE BASE AND PROPOSALS FOR ADDRESSING THESE

As already stated above, exhaustive knowledge is not required for 2004. The principal goal for 2004 is to prepare the next step of the WFD, i.e. the identification of significant water management issues in the river basin and the definition of programme of measures. It is likely that all assessments and levels of detail required under Article 9 cannot be done for 2004.

In order to pave the way for the definition of measures, for the cost effectiveness analysis as well as implementation of Article 9 it is recommended to establish an economic information network or forum, which can be used to support or validate the cost recovery assessment.

Be prepared! Milestones and outputs between 2004 and 2010
Member States need to report on progress towards implementation of Article 9 in the River Basin Management Plans, ahead of implementation of Article 9 by 2010
The final RBMP must be completed by 2009, with the draft RBMP by 2008. These milestones will also involve reporting on progress of Article 9.
In addition to this the Directive requires that Member State's produce a timetable and work programme for production of the RBMP by 2006 and an interim overview of significant water management issues by 2007.