Scope for local interpretation on ecological objectives for the Water Framework Directive

MEP/GEP Guidelines in a nutshell

The Water Framework Directive (WFD) prescribes that the ‘natural’ condition of the water system should be used as the basis for determining the Good Ecological Status (GES) of each water body. However, the hydrology of the Netherlands is the result of centuries of human intervention and it would often clearly be unrealistic to base the determination of ecological objectives on the country’s original meandering streams, braided rivers and great marshes bordering the dunes. For cases like this, the WFD offers an alternative solution whereby competent authorities must define both the highest achievable ecological status (Maximum Ecological Potential or MEP) and the ecological status they are actually going to strive to achieve (Good Ecological Potential or GEP).

Why are the Guidelines necessary?

To determine the MEP and GEP for a water body, the authority will require the services of ecological experts to identify what is feasible in the present situation. But it will also require a clear policy framework. At the start of the process, its decision-making body must identify which functions are sacrosanct. Then, even more importantly, once a theoretical target status (the MEP) has been established, it must decide what objectives the authority is actually going to strive to achieve. How many measures can the authority afford to finance between now and 2015 and how many are technically feasible in that time? To make sensible choices, local decision-makers need to be clear about the potential impact of future measures. Ecological experts must supply that information.

If an authority can get very close to the target status, it will achieve the GEP. If it is likely to fall far short of it, it will have to consider phased achievement or the adoption of less stringent objectives. The WFD offers these options, but authorities will have to explain the reasons if they decide to take them up. The objectives to be achieved by 2015 (the GEP or less stringent objectives) must be defined in terms of the WFD. The ecologists have a major role to play in this respect. It is their job to define the objectives on the basis of the measures selected by local decision-makers.

All in all, it is a process in which decision-makers and ecological experts cannot do without each other. The public and the European Commission must be able to see that decisions have been made in line with the WFD. It is vital that the process should be clear, transparent and well-documented, especially in view of the fact that it may eventually fall to the courts to judge whether the decisions fulfil the obligations imposed by the WFD.

The Dutch *MEP/GEP Guidelines* (*Handreiking MEP/GEP*) are designed to help authorities to achieve this. The document is intended for use by officials drawing up proposals for MEPs en GEPs and is therefore extremely detailed. This booklet summarises its contents in order to give you, as a local decision-maker or otherwise interested party, a quick idea of the approach proposed and the scope for local interpretation that the WFD permits in this respect.

What is the status of the Guidelines?

Is compliance with the Guidelines optional?

No. We have to account for our actions in Brussels. To be in a position to do so, we have to tread carefully and ensure that the Netherlands adheres to the international agreements made within the EU. This is particularly the case because the Netherlands has opted to implement the WFD pragmatically: we aim to improve the ecology, but only after careful consideration of all the other factors involved. For this reason, but also because we are accountable not only to Brussels but also to our own civil society organisations, interest groups and general public in the Netherlands, it is important that the process we adopt should be clear and transparent. Accordingly, the *Guidelines* have been given what is known in the Netherlands as '*LBOW status'*. This means that authorities must comply with them unless there are clear and compelling reasons for doing otherwise.

Is the rest of Europe adopting a similar approach?

The subject of 'heavily modified water bodies' has been discussed at length within the EU. The agreed approach is recorded in a Guidance Document, which forms the basis of the Dutch *Guidelines*. Exploratory discussions with neighbouring countries have revealed that the Netherlands is a front-runner in this area. This is hardly surprising, since few other countries have so many artificial or heavily modified water bodies. For that very reason, in fact, it is important for the Netherlands to maximise its use of the limited scope for local interpretation that the WFD permits by adopting a pioneering role in this area. Our experience can then be put forward as a basis for international harmonisation.

Are the Guidelines a recipe book for officials?

No. The purpose of the *Guidelines* is to avert a situation in which everyone has to reinvent the wheel and authorities end up applying different starting points and criteria. Despite the detailed step-by-step procedure they prescribe, the *Guidelines* allow considerable scope for individual interpretation as regards methods. They contain spreadsheets showing relationships between types of water bodies, pressures and effects, and there is a national helpdesk. In practice, moreover, authorities will need to draw heavily on the local knowledge of regional experts when applying the *Guidelines*.

When working out the MEPs and GEPs, it will be important to coordinate and share such knowledge and experience of the application of the *Guidelines* in the regions. Nationwide coordination of the process is therefore essential. This will be in the hands of a national project group. And at the end of 2006 there will be an evaluation, on the basis of which the *Guidelines* can be amended if necessary.

How have the Guidelines been developed?

The *Guidelines* have been drawn up by representatives of regional and national water management authorities, provinces, and the relevant ministries (Transport, Public Works and Water Management; Housing, Spatial Planning and the Environment; and Agriculture, Nature and Food Quality). The general approach and early versions of the document were discussed in depth in the regional and national consultative bodies set up to coordinate action on the WFD (the *Regionale Ambtelijke Overleggen*, *Regionale Bestuurlijke Overleggen* and the national *Regiekolom Water*).

The process

Who does what with the Guidelines?

The MEP and GEP must be defined in the form of concrete ecological objectives. Responsibility for identifying these objectives lies with individual member states. The Netherlands has decided to work out these objectives at regional level, not only because of the regional variations in water systems, but also in order to allow the parties in the regions some scope for local interpretation.

A good decision-making process requires good preparation. The recommended approach is to go through the entire step-by-step process several times: first in general terms and then in ever greater detail. The *Guidelines* suggest that authorities should start by going through the entire process at official level. This will provide an overall picture of the ecological objectives, the costs and the consequences for society. It is a good idea to develop a couple of variants, for example differing in the extent to which physical alterations are regarded as ‘irreversible’.

Decision-makers can then choose between these variants, which may correspond to scenarios worked out at national level. The chosen variant can then be defined in terms of the kind of objectives demanded by the WFD. The result will be an achievable and affordable package of measures that can be used to complete the river basin management plan.

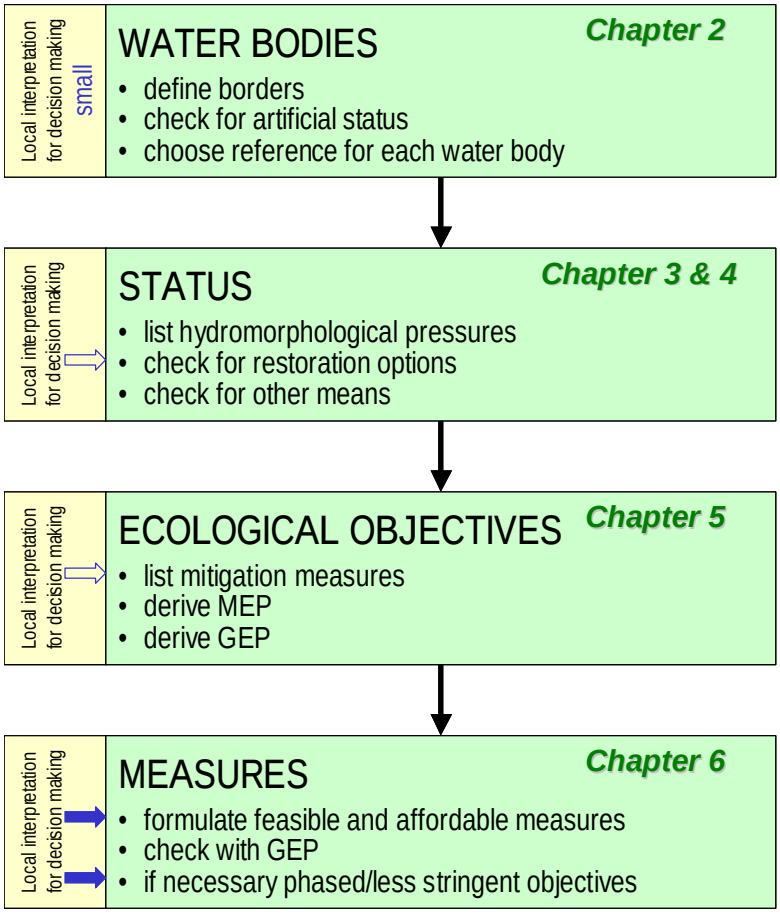
How are ecological objectives enshrined in legislation?

The Dutch Water Framework Directive Implementation Act to be published in the Bulletin of Acts and Decrees (*Staatsblad*) on 21 December 2005 stipulates that objectives are to be adopted either by order in council or via provincial environmental ordinances. The ecological objectives for heavily modified and artificial *national waters* are to be adopted by order in council, as are those for all natural water bodies in the Netherlands. Ecological objectives for regional waters that are heavily modified or artificial are to be adopted via provincial ordinances.

What do the *Guidelines* contain?

The *MEP/GEP Guidelines* are basically a step-by-step plan. Broadly speaking, they help water management authorities to answer three key questions:

- How should we designate a water body as heavily modified or artificial in the *River Basin Management Plan 2009*?
- How should we work out ecological objectives for these water bodies?
- What sort of measures should we consider, especially as regards new modifications to physical characteristics?



Topics in each section of the *Guidelines* with an indication of the scope available for local interpretation.

When is a water body artificial and when is it heavily modified?

An *artificial* water body is a body of surface water that has been created by human activity. Examples include ditches and canals. A water body is *heavily modified* if it has been modified as a result of physical alterations to such a degree that the GES is no longer achievable. Examples include the IJsselmeer and rivers that have been trained for navigation.

What exactly is and is not a 'physical alteration'?

A dike or the training of a watercourse is clearly a physical alteration. But what about the impact of dredging, recreational activities and fishing? The *Guidelines* opt for a broad interpretation of the term 'physical alterations' (within the scope allowed by the WFD). For example, the canalisation of a river for navigational purposes is obviously an (irreversible) alteration in the physical characteristics of the water body concerned. But can the same be said of the churning up of sediment by passing vessels, which impedes the growth of aquatic plants? The *Guidelines* regard this as a side-effect of the alteration. Canal maintenance, the cleaning out of watercourses and work to encourage the formation of new land in intertidal areas all fall within the definition of physical alterations, as do raised concentrations of nutrients in percolation water (provided they are of natural origin).

[example: The Ilperveld]

With the WFD in mind, the water management authority responsible for the Ilperveld nature conservation area was about to invest millions of euros in measures to improve water quality in the area. However, a study showed that percolation water rather than emissions was the main source of the high concentrations of nutrients. Because percolation is the result of an irreversible physical alteration, the WFD permits the adoption of less stringent objectives.

Do physical alterations in adjacent water bodies also count?

No. But, of course, such alterations do frequently have an impact. For example, they may hamper fish migration both upstream and downstream of the water body. However, for the WFD this is not in itself sufficient reason to modify the MEP. The authority must first identify the potential effect of reversing the alteration and then consider what measures should be taken where. The *Guidelines* show how water management authorities should deal with this situation.

[example: Fish migration and the Haringvliet sluices]

The Netherlands is doing its very best to make it possible for fish to migrate through the Haringvliet sluices. Even so, the natural migration route cannot be completely restored. Flood protection takes precedence. This means that there may be fewer migratory fish upstream. No account may be taken of this difficulty when formulating the MEP for the Dutch and German stretches of the Rhine. It will obviously be a good idea to keep an eye on how other member states deal with this problem in practice.

And when is a physical alteration 'irreversible'?

'Irreversibility' certainly does *not* depend on the cost of reversing the alteration. To encourage authorities to come up with creative solutions and to increase transparency for the public, the WFD demands that the authority should first clarify what could be done if money were no object (the MEP). Only then, in the course of determining the objectives, should it debate what it is actually going to spend its money on. 'Irreversibility' does, however, depend on the socioeconomic consequences of reversing the alteration for the existing functions of the water system or for the wider environment. If the necessary measure would result in a significant adverse effect on a use function, reversing it would be irresponsible and the alteration can therefore be regarded as irreversible.

But what is a significant effect? The WFD gives no clear guidance on this. Sometimes, however, the answer will be relatively simple. In general, for example, the removal of dikes will not be an option, because the measure would have an unacceptable effect on public safety. In other cases, the decision will involve consideration of many factors and will have to be left to elected representatives. Even then, of course, the ultimate decision will have to be backed by sound and transparent arguments.

[example: Baakse beek]
Many streams in the eastern Netherlands used to be fed by marshes. The Baakse Beek is one of them. Now that the marshes have been drained, its discharge is greatly reduced. The natural situation cannot be restored. There is a basic choice to be made between a free-flowing stream that is dry in summer and a dammed up stream which is always in discharge. Ecological considerations play a role in the decision, but so do the stream's other current functions.

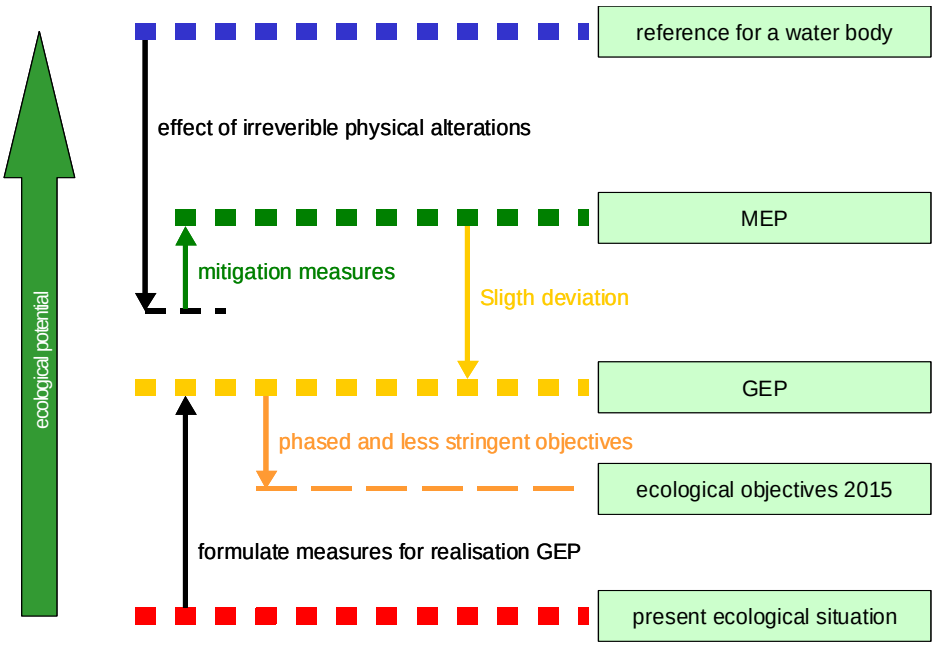
How far should we go in taking mitigation measures?

The fact that a physical alteration is irreversible does not mean that the water management authority can resign itself to its adverse effects. The WFD demands that, wherever possible, measures should be taken to mitigate such impacts and improve quality. Once again, the cost of a measure will not play an immediate role: the potential for taking measures must be identified first and the pros and cons weighed up later.
A mitigation measure must allay the effects of a human alteration *without* having a significant adverse effect on the use functions of the water body or on the wider environment. The *Guidelines* stipulate that the MEP must only take account of mitigation measures which are genuinely relevant and likely to have a substantial effect. This will ensure that ecological objectives are both feasible and achievable.

[example: Wildlife-friendly banks beside navigational canals]
The presence of dikes or roads alongside canals used for navigation often means that there is no room for wildlife-friendly banks. Where that is the case, wildlife-friendly banks do not need to be considered as a possible mitigation measure. In any case, research on the Amsterdam-Rhine Canal shows that existing wildlife-friendly banks do not always have the expected impact on ecological quality. The profile of the canal and the presence of busy shipping may make the canal unattractive to fish even if it has wildlife-friendly banks. In some cases, this can be used as an argument for excluding wildlife-friendly banks from the list of possible mitigation measures, although the reasons for this will have to be clearly set out.

Once a water body has been designated as 'heavily modified', how can we determine its maximum ecological potential and good ecological potential?

To derive the MEP for a heavily modified water body, the first step is to the reference condition (that of the most closely comparable type of natural water body). After that, the water management authority must determine what physical alterations have taken place and which of these are irreversible. These physical alterations necessarily have an effect on the ecological status of the water body; they reduce its ecological potential. To allay this effect, the authority must look at what mitigation measures can be taken to restore ecological potential. The MEP will be the result of the effects of the physical alterations offset by those of the mitigation measures, while the GEP will be the result of this minus the 'slight departure' from the MEP that is permitted under the WFD.



The key factors to be taken into account in the process of deriving the MEP are the 'irreversible' physical alterations and the measures that can be taken to mitigate the effect of these or improve ecological quality. These influence the level of the MEP and hence the extent to which the MEP differs from the natural reference condition. In other words, the MEP is the reference condition minus the ecological effects of irreversible physical alterations plus the effect of the mitigation measures. The GEP is slightly less than the MEP. If the current ecological status of the water body is less than the GEP, measures will have to be taken. If these are judged to be too expensive, phased achievement or the adoption of less stringent objectives will generally be an option.

Is the approach the same in the case of artificial water bodies?

In the case of artificial water bodies, the concept of 'physical alterations' is irrelevant. An artificial water body is one that has been created by man in the first instance and reversing any alterations will not restore it to its natural condition. They are therefore regarded as irreversible by definition. However, the authority must still seek to identify mitigation measures before the MEP can be established. The problem is that some artificial water bodies, like ditches and canals, are not really comparable to any kind of natural water body. In their case, the reference condition can be taken to be that of the best ditches and canals. In fact, for a number of common types of heavily modified and artificial water bodies, national MEPs and GEPs have been established to serve as provisional examples.

What do we do when we have worked out the GEP?

Once you know the GEP, you can decide whether the water body is already fulfilling it. Or, better still, whether the GEP will be achieved by 2015, based on expected developments in the area and the measures to be taken. If so, this only needs to be properly explained in the preparation report for the *River Basin Management Plan 2009*. After 2009, however, the reasons for designating the water body as 'heavily modified' have to be reviewed every six

years. If your assessment shows that the GEP will not be achieved, you should first check the whole process to make sure than there really is a problem.

What measures should we take if the GEP will not be achieved?

If the assessment shows that the GEP will not be achieved, it will also reveal the causes of the failure and so provide the basis for a package of measures to improve the ecological quality of the water body concerned. In many cases, these will have to be *tailored to the individual situation*, and this requires a thorough knowledge of the system.

It will frequently not be necessary to implement all the measures. The authority should identify the optimum combination of measures affecting physical characteristics and measures to reduce emissions. It should then determine the priority to be given to each measure and the level of scale at which it will be most effective (ranging, for example, from individual water body to complete river basin).

The decision to adopt a particular package of measures should be based on an assessment of the socioeconomic pros and cons. This will naturally allow considerable scope for political choices. If measures are not achievable, or are not regarded as affordable, the member state can apply 'exemptions' which allow the GEP to be achieved at a later date or less stringent objectives to be adopted. This is, of course, subject to clear conditions. The authority must show that the exemption is necessary and must ensure that problems are not transferred to other water bodies. The *Guidelines* deal with these matters in greater depth. However, an assessment framework for the consideration of socioeconomic pros and cons is being developed by a special working party set up to produce proposals for the basic scenarios and a more detailed framework for the assessment process.

[example: Hagmolenbeek]

Remeandering is a possible way of restoring streams that have been canalised. In the case of the Hagmolenbeek, the measure would be expected to lead to the loss of 0.5% of the relevant agricultural land. This is not in itself regarded as a significant adverse effect. The stream's existing channel is too large. However, reducing its dimensions would raise water tables and lead to an increased chance of flooding. In addition, the economic impact on agriculture as a result of the less favourable hydrology would be expected to have a significant adverse effect on that use function. This effect could be mitigated by a diversification of agriculture, for example combining extensive farming with wildlife development, or with recreation and tourism. To achieve this, some of the farms would have to be bought out and some would have to be financed in different ways. Land use of this kind would make it possible to raise the water table in the river basin. In this case, therefore, the assessment of the socioeconomic consequences includes taking account of a possible partial change in function.

To sum up: what scope is there for individual decision-making?

The *MEP/GEP Guidelines* are deliberately designed to offer authorities the greatest possible scope for local interpretation. This exists primarily in relation to:

1. The designation of artificial and heavily modified water bodies

To designate a water body as 'heavily modified', the authority must show that the GES is no longer achievable as the result of 'irreversible physical alterations'. The *Guidelines* offer local decision-makers considerable freedom in the way they interpret this. They can decide for themselves not only what counts as a 'physical alteration', but also whether such an alteration is 'irreversible'. The rule in this respect is, briefly, that an alteration can be regarded as 'irreversible' if reversing it would have 'significant' effects on use functions (such as housing or navigation) or an adverse impact on the environment. This freedom of interpretation also applies to artificial water bodies: in their case, the (excavated) morphology is regarded as a *fait accompli* (and therefore irreversible).

2. Realism of mitigation measures

Even if physical alterations are regarded as irreversible, authorities and provinces must seek to identify measures to negate, or at least mitigate, their effects. However, the *Guidelines* stipulate that, in determining the MEP, the authority need take mitigation measures into account only if they are genuinely relevant. This will enable decision-makers to ensure that the MEP does not paint an unrealistic and idealised picture.

3. The difference between the MEP and the GEP

Once the MEP has been adopted, the GEP can be decided. Under the WFD, the GEP may show a 'slight departure' from the MEP. The *Guidelines* offer authorities some freedom in this respect too, but this is relatively limited.

4. Phased achievement and adoption of less stringent ecological objectives

Once the GEP has been adopted, the authority must compile packages of measures for water bodies which do not fulfil it. At this stage, the cost of measures becomes an important factor. If decision-makers feel that the cost of the necessary measures is disproportionate, they can decide on phased achievement (a longer deadline for the achievement of the GEP) or the adoption of less stringent objectives derived from the GEP.

Frequently asked questions:

Do the Guidelines have to be so complicated?

People who are going to have to use them say that the *Guidelines* are too elaborate and specify too many steps. Is all this work and administration really necessary? It is true that the *Guidelines* are highly detailed. This is inevitable, because they have to correspond to the likewise extremely detailed European Guidance Document. We have to be able to justify our actions to Brussels and that means keeping careful records of how we have arrived at our decisions. In any case, experience of using the *Guidelines* shows that the process is time-consuming in the beginning but gets steadily easier as time goes on. However, authorities will need to release sufficient manpower to do the groundwork properly.

Why don't we just set the GEP to match what we are going to achieve through our current policies?

If we did that, we wouldn't be playing the game agreed within the EU. Experience of implementing other European directives shows that we would have to do the groundwork eventually. We would just be putting it off. It is better to do things properly now. Also, if we act now, the directive provides a good opportunity to persuade other parties that water quality must be improved and extra measures taken.

Do we have to go through the whole process for every individual water body?

Yes. Each individual heavily modified or artificial water body has its own individual characteristics. We could have opted to derive national MEPs and GEPs for various categories of water bodies. This would have been less work but would also have offered less scope for a tailored approach and local interpetation. The need to comply with the detailed *Guidelines* and deal with each water body individually is the price we pay for maximising the scope for local interpretation and the chance to keep objectives achievable and affordable. So the extra investment will pay for itself in the long run.

However, the *Guidelines* do make various suggestions for grouping water bodies together in order to save work. Also, they point out that the level of detail of the required analysis will depend on the obviousness of a particular conclusion. A single sentence will be sufficient to establish that a dike is an irreversible alteration, whereas a more detailed analysis may be required in relation to modified management of a water level.

When do the MEPs and GEPs have to be ready?

Since the ecological objectives for natural water bodies still have to be assessed and coordinated internationally, they cannot be adopted at political level until December 2006. Objectives for heavily modified and artificial water bodies cannot be adopted until after that, in December 2007. This may seem a long way off, but a great deal of coordination will be required and it is advisable to start soon.

What about the GEP in protected areas?

In some areas, ecological objectives have already been established, for example under the EU Birds and Habitat Directives. These may not be the same as the objectives resulting from the WFD. If so, the most stringent objectives will take precedence. Here too, however, exemption is an option, unless the relevant directives say otherwise.

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