

WATER POLICY

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Future EU water blueprint to focus on savings

The European Commission will consider new measures to decrease water consumption in buildings, agriculture and other areas after a major review of current EU water legislation has been completed by 2012.

The Commission is expected to table a 'Blueprint for Safeguarding Europe's Water' by 2012.

The blueprint will result from a review of the bloc's current strategy on water scarcity and droughts, a review of the implementation of the EU Water Framework Directive and a review of the vulnerability of water resources to climate change and other man-made pressures.

It will examine member states' implementation of existing EU legislation and assess the potential for increasing water availability, savings and climate resilience.

Further studies are being conducted to assess where and when water scarcity is a problem and evaluate the magnitude of the problem.

Water hierarchy

A Commission communication on water scarcity, published in 2007, laid down a hierarchy under which "water demand management should come first, and alternative supply options should only be considered only once the potential for water savings and efficiency has been exhausted".

Janez Potočnik, the EU's environment commissioner, appeared to follow the same line when he said earlier this year that the EU had not yet looked closely enough at demand-side measures like water pricing and efficiency.

While the EU's Water Framework Directive (WFD) already requires member states to introduce water-pricing policies with incentives for efficient water use, it does not otherwise address demand management issues.

In a 2009 study, the European

Environment Agency (EEA) noted that Europe had so far concentrated on boosting water supplies rather than exploring ways to reduce demand for it. The agency is calling on European governments to adopt policies to control water demand, as rising living standards have pushed the use of water resources beyond sustainable levels.

The report lists a number of good practices to reduce water consumption, like making sure people pay for water according to volume. Others include raising awareness to change habits and lifestyles, installing water meters in homes, investing in better leakage detection systems, properly penalising illegal abstraction and educating farmers to make the right choices on crops and irrigation methods.

Leakage reduction

As part of its work towards the 2012 blueprint, the Commission is currently studying options for establishing a more efficient water distribution system to reduce water losses and related economic loss.

Indeed, Commission studies show that water leakages from distribution networks are as high as 50% in certain areas of Europe.

According to the European Water Partnership, a non-profit organisation, leakage rates in Germany for example are very low, whereas some Italian cities have up to 70% leakage rates and London up to 35%.

Buildings

The drive to save water also covers water savings in buildings.

According to the EU executive, up to 30% of the volume of water consumed in buildings in some regions could be saved. A study commissioned by the EU executive further claims that a

number of specific technological and technical changes to taps, toilets, showers and water-using equipment such as dishwashers can reduce water demand and result in water savings of up to 80%.

The Commission is thus considering tabling a new EU directive on water efficiency in buildings similar to the one already adopted on the energy performance of buildings.

The same applies for efficiency standards for water-using products, along the lines of EU legislation on eco-design requirements for energy-using products.

An EU study on efficiency standards for water-using products was finalised last year, but the EU executive is still weighing different policy options regarding the water efficiency of buildings and needs to look at cost-benefit analysis of such proposals before actually tabling them.

Agriculture

According to the European Environment Agency, agriculture accounts for 24% of water abstraction in Europe – up to 80% in some southern member states – compared to 44% abstracted for cooling water in energy production.

However, the impact of agriculture on water reserves is much bigger in the end as almost all cooling water is returned to a water body. Only around a third of the water used in agriculture returns to a water body.

Therefore, the Commission has identified agriculture as the priority sector in which measures to combat water scarcity need to be considered.

The EU executive is also mulling a specific study on water management in the post-2013 Common Agricultural Policy (CAP), and plans to address water pricing in agriculture at a special conference in Poland in 2011.

Expert: Water footprint key to sustainable agriculture

Precise data on water usage will soon help farmers and policy-makers make better decisions on where to grow crops, says Derk Kuiper from the Water Footprint Network, a UN-backed organisation.



Derk Kuiper is executive director of the Water Footprint Network, an organisation established in the Netherlands in 2008 to promote sustainable and equitable water use worldwide by promoting the water footprint. He was speaking to EurActiv's Outi Alapekkala.

Whose idea was water footprint? Please can you explain the concept and its history.

In September 2007 a number of organisations came together in the Netherlands around the concept of the water footprint, and then started a process of figuring out what that footprint could mean, especially for businesses, and how they could use the water footprint to better understand the issues around the sustainability of water use. This then happened in the course of 2008, when many other organisations and parties than companies joined the debate.

The World Water Week in mid-2008 showed that interest in the water footprint was soaring. Myself and Professor Arjen Y. Hoekstra (scientific director of the Water Footprint Network and creator of the water footprint concept) came to the conclusion

that we need a framework and institutional setup to organise the huge energy around the marketplace and other organisations. And we said that let's put together a foundation that can channel the energy and be the basis for information and knowledge on the water footprint.

We don't see that the water footprint will deliver everything to everybody but we think that it can help.

Who were you around the table when you created this idea?

The idea of the water footprint has been there for 10 years, cornered by Arjen Y. Hoekstra, who at the time worked at the UNESCO IHE – also one of the founding partners of the Water Footprint Network. UNESCO IHE is the one basically devising the methodology and putting numbers to the methodology of water footprinting.

The methodology started from the work of Tony Allan, from the UK, who investigated the issue of virtual water and virtual water trade. So Professor Hoekstra and his group at UNESCO IHE basically expanded on that concept and put numbers to it.

Organisations like WWF were very interested in the concept, as they had been trying for a long time to get to grips with the production and consumption side of water use.

And the water footprint seemed at the time an interesting concept to start better understanding the link between consumption and production and to get supply chains and global trade into the picture of water issues locally.

The first meeting organised around the issue in September 2007 included Arjen Y. Hoekstra, representatives of UNESCO IHE, participants from WWF, Coca

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Cola, Nestlé and the WBCSD [World Business Council for Sustainable Development]. That group of people expanded hugely during the course of 2008 and currently many more are now working with us to create a standard for water footprint.

Is that your final aim – to create water footprinting standards?

No, it is not the final aim. We have found that water footprint means a lot to many different people – especially when a thing becomes hype and suddenly everybody wants to have a piece of it.

But we hope that there will be one global method - based on best available science - to do water footprint assessment, because we do not want to end up in the same situation like with carbon where there are many, even competing, methods for assessing the carbon footprint.

We hope to bring together the science, practitioners and other stakeholders in the community around water management and the water footprint, and basically drive forward development of the standard. We have already published a first version of that standard, in 2009. It is available to everybody and is fully open source to make sure that everybody has the same starting point.

This was our first product, and it generated a lot of interest from different stakeholders around the world. But is also generated a lot of questions, and we set up research streams and working groups on those to flesh out some of the details.

Now, based on all the work done, we have a completely revised version of the manual with much more detailed information on things that were missing. It will be available to partners on 15 October and for the rest of the world in February 2011, as we are publishing it as a book.

At the same time we are also providing the updated datasets on the water footprint of nations and products. We are thus just providing information without saying who is a good or bad organisation or company, allowing people to make their own judgement.

We are also trying to engage in an ISO process – which is currently looking at the water footprint from the LCA (life-cycle assessment) perspective.

What are the biggest challenges in water footprinting?

I think that one of the biggest challenges that we are facing is to

actually get the good datasets. Some of the data we get does not have the resolution in time and space in order to really help very localised water management, for example.

Another challenge is missing information on water use and consumption in some sectors.

So the big challenge is to push forward the agenda of getting datasets.

What are your datasets – what data you need?

It varies from high resolution climatic data to crop and production data, as well as water quality. Regarding water quality standards, for example, we need to assume a lot of things as standards do not exist around the globe and even when they exist, they may not really be used.

So it is very difficult to come up with good numbers when you don't have that kind of information.

Therefore, whenever you see a water footprint assessment, these assessments always specify on which dataset, under what timeframe and which resolution they are based on – because there are a lot of assumptions. But it does not mean that the numbers are wrong – it means that numbers can be better.

But the question is how much of that data you really need to act in a sustainable manner in the course of your water consumption.

Which sectors do you lack data for?

You have to realise that the water footprint and virtual water trade debates originated from the food security issues. So it was mainly agriculture-oriented – production of food and commodities. So that's where the main numbers are.

But we don't have data on global consumption of water localised in time and space for the mining sector, for example, or that for the oil and gas industry. So, we cannot yet build a very complete picture of all water consumption globally, just because some sectors are still missing.

Why do you lack data on these sectors – are they not measuring their water use or unwilling to share the information?

If you look at the world's water – 70-80% is being used by agriculture. And agriculture is one of the most important functions in society - to feed, clothe and employ people. So it is not that much about malice from other sectors, but is much more focused on the issue at stake (agriculture).

I think that in 2011 we will

have more datasets on non-agricultural use sectors and more detailed ones on agriculture.

There might also be some methodological challenges, but I don't actually think that they are very big.

While the concepts are well-defined - more experience needs to be gathered on how to apply them in different circumstances.

Another key challenge is for specific users to place their use within the context of the catchment or the hydrological unit – which is about connecting the use of water to the place. This is very different between water and carbon. While CO₂ is emitted to one global 'body', placing one's water use and consumption in the context of a river basin is very difficult, as is engagement in water management of that river basin.

But here we are coming from a new concept back to an old story: how uses will actually position and engage within the policy and institutional context which they operate in and where they are sourcing their materials from, which they live in and where they do or don't have access to water and how they engage with each other to actually allocate water correctly.

What role is there for using footprinting in policymaking, in particular in the EU?

This is actually a very good question and there are many different aspects to this – both at the EU and country levels.

The Spanish have adopted the water footprint analysis within their river basin management planning. They have done it to understand the water consumption of all sectors in those river basins. And the reason behind that is to be able to compare the socio-economic value of the different sectors to society and to develop clear strategies to deal with increasing water issues in terms of scarcity and pollution.

So at national level, water footprinting can help policymaking in terms of river basin management, for example.

On another level, different policy sectors can be informed by the water footprint. And there is one sector that is not yet informed by the water footprint but could be a very strategic one, especially at European level:

If you look at Europe, water availability is very unevenly distributed across Europe and you can say that this is a problem. But it is also an advantage, because you see very high productive, highly efficient water use sector in terms of, for example, horticulture in Spain.

And the reason is that they have such scarce water resources there that they are producing very high value crops with that water. But at the same time they are still producing large amounts of their staple foodstuffs, like wheat and even cultural foodstuffs, like rice, with very valuable water. And that is in my opinion quite a waste of water, because you have other regions in Europe that would be much better suited for the production of foodstuffs.

So at European level, water footprinting could actually inform an analysis from a water perspective, where to go for example with low value, high water-demanding crops that are essential for part of food security in Europe. And this kind of debate I have not heard about yet. But it will surely go there.

So, the idea is to give advice on what crops can grow where with the smallest water footprint?

Not necessarily the lowest but the most efficient – in synchronisation with water availability so that you can actually retain the environmental and social benefits of rivers, as well as the economic activity.

I'm sure we will see this coming, but it is very difficult for people to understand how this can be done – so it will be up to researchers to start showing how the different endowments in terms of water now do not determine where crops are grown. It's more the other things like subsidies and markets and the economy, and even opportunistic behaviour, which determine where crops are currently grown.

But with this kind of analysis and advice, will you be faced with the question of national food sovereignty?

Yes, that's it. But I think that now within the European context what is happening is that national sovereignty is being greatly undermined – especially because of the financial crisis. We have to bail out everybody in Europe. So what you see is that there might actually be an opportunity to start opening those discussions at European level. But not at global level, as I'm sure there are many more difficulties at that level.

But at the European level, the EU by its nature would be a framework that could help further that debate. I think we will see that in the future.

Another thing is the cost-recovery and pricing and valuing of ecological services. In the

sustainability assessment, water footprint uses the concept of sustainability boundaries – which is about how to actually sustain the environmental and social benefits associated with your water. And if you start pricing those you can actually balance them much better against the economic activities that are taking place on the basis of water.

So I think that here the water footprint has a role to play as an indicator.

There is also an opportunity here to have a much broader debate, beyond water managers, on weighing water consumption against environmental, social and economic benefits. We need trade and economic development ministries, water managers and suppliers to talk the same language in one room.

Beyond Europe, Europe also has a water footprint on the rest of the globe. And if you link your development and trade agendas to that water footprint, I think you could actually create win-win situations and develop economic activities that might be much greener.

Water footprints can not only inform on water but also on agricultural, trade and investment policies.

How do you want the EU to take water footprinting into account?

We are basically just starting to engage in policy discussions, as we've been so busy over the last two years in ramping up what we've been doing.

I'd expect that the water footprint will start featuring among other indicators of sustainability in Europe. And I don't think that we need to do so much about that.

Many people have a very narrow view of what water footprinting is and I try to open up that view and say that you can use it as almost a sustainability indicator. But it can also inform on decision-making, not only on water policy, but it can also add to policymaking on economic issues – on trade and agriculture.

We have started to work on this and have written a report to the UNEP [United Nations Environment Programme], including a chapter on what kind of policy measures we see linked to the water footprint from the global to the very local level. But that is not a public document yet.

But a lot of this thinking on policy will also be incorporated to the new version of the manual. That is about starting to think how different users and governments at

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Electricity: The looming power struggle for water

Competition between electricity and water demand is climbing up Europe's agenda as climate change is set to further deplete freshwater supplies. Concerns are now being raised that EU renewable energy policies and electric cars could further exacerbate the problem.

Electricity demand is expected to continue growing in Europe, while climate change will put an increasing strain on freshwater resources.

An EU report earlier this year warned of 'permanent water scarcity' in some member states, and pressure is expected to spread from current hotspots in the Mediterranean to South-East and Central Europe.

In Europe, Malta exemplifies the close connection between water and electricity as the island state's chronic freshwater shortage has forced it to filter seawater in three energy-intensive desalination

plants, the Worldwatch Institute pointed out in a recent blog post. As a result, hikes in energy costs are immediately reflected in water bills.

"Malta is heading for a water crisis in the near future if it does not change its course soon," the think-tank argued. The country is now moving to resolve the issue by building the world's first multi-utility smart grid system, which includes the installation of 250,000 smart meters to monitor both water and electricity usage in real time.

"It's very clear that there is a link between water and energy," argued Peter Gammeltoft, head of unit for water at the European Commission's environment department, speaking in Brussels earlier this month. "I don't see any final policy solutions, but it should be looked at."

Electrification set to

worsen problem

The electrification of the Europe's energy supply is set to continue and could further intensify if electric vehicles become a reality, according to the European Commission's latest energy trends to 2030 report.

The development, however, has consequences in terms of water demand as thermal power plants like nuclear, coal, geothermal and many natural gas installations require large amounts of water for cooling. Moreover, the new renewable alternatives, while preferable for their low CO₂ emissions, are not all necessarily better in terms of their water footprint.

Wind and photovoltaic solar power use less water than other power technologies as they only require water during the manufacturing of the equipment,

according to a 2009 report by Boston-based market research firm Lux Research.

But another solar technology, concentrating solar power (CSP), requires even more water than conventional power generation. It is being developed in the south-west US in particular, and the first European plant was inaugurated in Spain in 2007.

Parabolic troughs, the most commercially available CSP technology, collect heat from the sun to power steam cycles similar to those used by coal and nuclear stations. Such plants require cooling, which is conventionally done with water. Additionally, water is required for cleaning the mirrors that are used to collect the sun rays.

Figures from the US Department of Energy (DOE) show that CSP plants with conventional cooling systems use

two or three times more water than coal-fired power plants, it was noted in another Worldwatch Institute blog post. Moreover, such solar installations are often located in water-scarce areas with maximal hours of sun light.

The answer could lie in alternative systems like air cooling or hybrid wet and dry cooling, which could reduce water usage by 80% to 90%, according to a report by the US National Renewable Energy Laboratory (NREL). The downside is that they require greater capital expenditure and come at the expense of efficiency when air temperature rises, it said.

The Worldwatch Institute suggested that despite the cost and generation trade-offs, water scarcity is likely to lead to the rise of dry cooling systems. "After all, we need to make sure that water does not limit the expansion of clean, sustainable solar energy," it argued.

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different levels can actually engage based on water footprinting.

Meanwhile, businesses seem to be ahead of the game regarding water footprinting. How do they benefit from this?

For corporates, water footprinting can mean a lot of different things. Most use it just to measure their water consumption in their operations and supply chain and try to link it to the local situation to understand what the main sustainability issues are – that businesses actually refer to as risks.

And they want to understand these risks – be they related to investments, reputation, regulation or sustainability – in their operations and supply chain.

As international focus on water and the need to improve water efficiency grows, could you imagine some sort of international trading developing around the impact of water use on the environment?

We take a very simple, tree-step approach to this – we do want in the first place to avoid water footprints altogether. Then, if you have a water footprint, try to reduce it, because water always has a cost.

How can you avoid having a water footprint?

What I said about the Spanish context and cereals – that the water footprint could be avoided in that place – so you could go somewhere else to do the production. And then reduction is clear – you increase efficiency.

The third step is the offsetting piece – how to offset water footprint. You would think that you can offset the water footprint of a certain time in a certain place by compensating for it at certain time in a certain place – but this is almost impossible to do, as there is always a time and space lapse in that equation. And because it is like that, it becomes a value judgement. And we do not want to get into that debate, because we don't know what constitutes an offset – and we don't have that sort of political frame to do it.

This is very theoretical, because there is no offset really.

Meanwhile, talks about how we can make a market of water footprint or water offset credits comes up all the time, and I think there might be some possibilities – but that is more my personal opinion. But nobody knows how to do it.

Also, don't think that through an offset agenda we can have the most impact on more sustainable water use.

While there is a lot of development in that field, we are not engaging in that, because we don't have the staff or resources to do that, and it is also highly political. These systems are often surrounded by regulatory frameworks and – if not – they become voluntary systems and I don't see that happening quickly with water.

Industry: Indicators underway for water-efficient agriculture

Large multinational food companies are currently looking at indicators farmers could use to show progress in saving water. Peter Erik Ywema of the Sustainable Agriculture Initiative, an industry platform, spoke to EurActiv in an interview.



Peter Erik Ywema is general manager of the secretariat of the Sustainable Agriculture Initiative (SAI platform), the food industry's primary initiative to support the development of sustainable agriculture worldwide.

He was speaking to Outi Alapekkala.

What is the history of the SAI platform?

It was founded in 2002 by Unilever, Danone and Nestlé, so it is a food industry platform – it is not a multi-stakeholder initiative, but only counts the food industry among its members.

It is a member-based

organisation targeting their sourcing. Agriculture is our primary concern because our members source from farmers. Eight years ago the initiative started from food companies' concerns in that they realised they couldn't solve issues alone. Sustainable agriculture is a pre-competitive issue for the industry.

What do you mean by describing sustainable agriculture and water use in agriculture as a pre-competitive issue for industry?

Even though companies feel that they are competitive, they see that the development of a playing field of sustainable sourcing has to be seen as pre-competitive.

They also saw eight years ago that there was a lot of confusion on the market – and there still is – when different buyers of agricultural products come with different requests to farmers.

What do you mean by different requests?

Different procurement schemes from companies like Unilever, Nestlé, Coca Cola – they are all slightly different regarding their demands towards farmers, some focusing more on social issues, some on water, etc.

Now all our members adhere and use our basic definition of

sustainable agriculture.

The added value of the platform is that those 25 big multinational food company members use the same principles and practices towards their suppliers regarding sustainable agriculture.

So they are streamlining their demands to the extent that it is possible – what they ask from farmers and how they make farmers aware of the need to produce sustainably.

And part of the SAI platform's package of principles and practices is about water – others include soil, pesticide use, farmers' income, rural development, etc.

Are any farmers involved in all this?

No, it is a food industry platform and it started with defining those principles, but the members who were present at the beginning have tested those principles within their supply chain or with 'their' farmers, who supply the companies: to not make it just a theoretical exercise, but also end up with recommendations on good practices.

We feel that this is the most pragmatic way to do it in the mainstream value chain. So it is not about a niche product, such as fair trade or organic, but about mainstream products and having a basic understanding of what

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Expert: Medicines pollute world waters

Europe's freshwaters are increasingly filled with pharmaceutical residues and other micro-pollutants, which are potentially harmful to human health and the environment, warns Friedrich Barth from the European Water Partnership (EWP), a research group.



He was speaking to EurActiv's Frédéric Simon and Outi Alapekkala.

Friedrich Barth is vice-chairman of the European Water Partnership (EWP), a membership-based association which initiates and coordinates concrete actions to achieve the Water Vision for Europe.

Some key elements of the Water Framework Directive (WFD) are

coming into force this year, such as its pricing policy. What's your general feeling as to how the WFD is being implemented so far and do you believe it is already starting to show results?

The first thing to say is that this is really a milestone piece of legislation. It takes a holistic view on water management in river basins – it looks at quality, quantity, ground and surface water – before there was really a

piecemeal approach.

All member states must submit their river basin management plans this year, which many have done, and others not. In Spain, Belgium, Denmark, Lithuania, Slovenia, Greece and Cyprus, consultations have not yet started or are ongoing.

But it is one thing to submit a plan; however, the Commission still needs to examine their contents and to see whether they are in compliance.

You can say that the WFD has at least triggered a process in most

member states. There is certainly greater cooperation amongst member states on water. Some of them have also had very nice public participation processes, which beforehand was not the case. Water management was usually something done behind closed doors with a couple of engineers deciding on a technology fix.

Traditional areas of cooperation, such as with the Rhine and Danube rivers, have even been strengthened.

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sustainable agriculture means.

For example, if one of the recommendations is to use as little water as you can for a kilogram of crop or livestock – it is considered as pre-competitive, as everybody depends on the same amount of water.

Water sustainability in agriculture is not yet a competition issue, but could become one.

What is the interest of the food and drinks industry in using water efficiently?

The interest is that they want to buy agricultural products in the future as well. So they are really concerned that they cannot, if we don't care about water or soil. So it is more than just ethical or CSR issues: this is about strategic issues of procurement and supply.

You said the SAI platform is more of a research organisation than a policy lobby. What are you researching?

Our members research the use of drip irrigation, for example, and they share the results of their pilot projects all over the world – be it in India, Brazil or Europe – to make use of the results.

As a platform, we do not do much research ourselves, but now we are doing laboratory research on what can be the best indicators or the best metrics to prove progress in sustainable agriculture – how can a farmer show that he is improving and doing a better job compared to a year ago or compared to his neighbour.

For water this starts with measuring the water you apply in your field. Comparing those figures with your neighbours or what you have used last year. Awareness is the first step.

This kind of research

will be of huge interest to CAP reform.

Yes, but I don't know much about CAP reform, to be honest. We are much closer to the farmers, researchers and supply chains than to politics, the EU or the governments.

There is a lot happening without governments and their interference. There is a lot of progress happening just between the different chains in the value chain and even between NGOs and companies.

Today (12 October) we had a stakeholder meeting with WWF and different trade organisations and companies to talk about what the future issues for sustainable dairy are which are not yet on the agenda.

What are you saying – that you are more efficient on your own or that governments are not interested in this subject?

No, they are just absent. The EU and government people don't keep up with the speed of developments and the real changes in the value chain – or the real improvements in the production of food.

Production of food has been made more sustainable and every day people are working on that – be they individual farmers or big multinationals, small companies or traders.

But the SAI platform's sustainability principles and practices are not yet at mass adoption level. They should be used much more, and widely. So, on pilot-scale level, our activities concern up to 30,000 farmers – but we need to reach out to millions of farmers and the struggle is how to do that.

Do you think that governments are not interested or just not

involved?

I don't know, both. Meanwhile, they are invited to our events like the big conference we just had last May here in Brussels.

What research work are you doing on water? Are you addressing the water footprint concept?

We do work with the water footprint concept, although we see serious shortcomings with regard to regional impact. Now, a cup of coffee is often associated with 1,500 litres of water or so, but it depends if that is a problem. Some coffee regions receive too much water rather than too little.

Does your platform eventually hope to give advice in future on the best location to produce certain foods, so that the crops are the most water efficient and sustainable?

In theory, yes. I think that some of our members make their choices based on the availability of resources – and water is one of the resources that can be available or can be scarce.

I see a problem with growing tomatoes in California, because they are very water intensive, for example, and there is just not enough water there. So there have been initiatives from the Californian government to shut off the tap for farmers, giving priority to citizens.

So if you decide to grow potatoes or tomatoes in a place where there is no water available or where it is scarce – there is a risk of not getting the water if it is redirected elsewhere. And that is certainly part of planning your capacity.

What about water pricing in agriculture? What does the food

industry think about that? I'd imagine that if farmers need to invest, for example, in water saving technologies, then the price of agricultural commodities will go up.

There is no common consensus on this.

I think that industry sees pricing as a potential tool, but I'm not sure if everyone agrees on that. There is no single view. And some people still see water as something everyone should have free access to, so no price for it.

But very often if there is no price there is no drive for using less. So here there is no difference in perception between people, industry and other stakeholders.

I think that many people in industry believe that if there is a price on something it drives more efficient use.

And even without a price, there is a lot to do to use less water and raise farmers' awareness about water issues.

Do you see any role for any kind of trading of water credits in agriculture, for example?

I don't think so, because this is a local issue and therefore very difficult to design.

Could you imagine any offsets for water use in agriculture?

No, but I think there should be better watershed management at governmental level. So governments need to understand watersheds and capture areas, where one should have a specific policy for those areas to create better equilibrium.

What are the main challenges for sustainable water use in agriculture? Are there any technical or

scientific challenges?

I think that the challenges are not so much technical.

We had a water seminar a year ago in Rotterdam and one of the comments of the International Water Management Institute (IWMI) was that we all seem to do the same pilot projects proving that drip irrigation works and we use less fertilisers and pesticides with amazing results.

But the question is that why isn't all this immediately picked up by other farmers, because even the payback time is less than a year. Even with a low price on water the payback time is fairly short. And this has been proven in Italy, India, Spain and California.

So, what's the problem?

Exactly that's the problem – why isn't there any pick up of this? I don't have the answer. So, the technique is there and we know how to do it.

But then it must be the cost.

There is a price, of course, but if paybacks proven by these pilots are so short I don't know why this is not working.

Maybe it has to do with culture, farmers don't adopt these new techniques or new technology easily. Maybe it has to do with awareness. Meanwhile, better water management would improve the product and the yields as well.

How can drip irrigation increase yields?

Because you apply the exact amount of water that the plant needs. And if you do that in the right way, tomatoes for example can grow bigger and have higher sugar content.

So, apart from the environmental effects there are huge yield effects as well.

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Are the 'macro-regions' that the Commission is trying to promote integrated?

The Water Framework Directive has one very particular feature that other pieces of legislation don't: it makes regions work together across borders. Countries must cooperate on the ground and this is promoting regional integration.

There is always room for improvement but this is really promoting regional integration in Europe.

In which regions is this working well in particular?

The Danube and Rhine river basin show very good cooperation. These countries really work in a very positive way together. Twenty years ago no information was flowing between the Danube countries, only water. They didn't even inform each other on accidents before - I remember them being caught by surprise on oil spills in the early 1990s, for example.

What is your assessment of the pricing policies which have to be put in place? Is that something you support?

The article on pricing was one of the most controversial aspects of the legislation. Full cost recovery is not mandatory in the legislation; it is a principle that must be followed. So we did not manage to negotiate a mandatory tool. We supported full cost recovery as a mandatory part of the directive. This could sometimes mean higher water prices for consumers, but not everywhere.

In my personal view, water is in many areas in Europe far too cheap, it does not cover the costs. And the European Investment Bank tells us that a lot of water suppliers are de facto bankrupt because the pricing policies are not sustainable in terms of refinancing the infrastructure and operational costs. It is a very diverse picture in different member states.

But it is considered as a public service, and is therefore subsidised by the state.

Yes, that's what everybody did for the infrastructure of course. Infrastructure was always heavily subsidised, because you cannot finance it at the beginning in full via the price. But you could go to full cost recovery after some time. It is considered as a public

service but at the end of the day the taxpayer always has to pay for it, whether you pay via the price of water or through a normal tax. It is much better to pay through the water price, as then you get sustainable services, because water operators have a sustainable finance policy and the service could be better.

I think that European citizens would accept higher prices if they got really good service. One problem is that even if some suppliers supply very good services - because tap water is often better monitored than bottled water - it is not well communicated. The communication is in most cases very bad. But you see that people would be willing to pay more for a really good service - they currently pay 1,000 times more for bottled water...

I use 180 litres per day for four people in my household. The average in Germany is 120, whilst in the Mediterranean it is around 350. We can therefore reduce consumption a lot and be much more efficient with it. With the WFD we have increased the transparency over what the costs of the water supply are and where the money paid for drinking and waste water goes.

There is still a major difference between what is considered to be a public service, such as drinking water, and other uses by different economic sectors. What about pricing water pollution from river traffic, for example, or water use in agriculture?

We are not at a very advanced stage with this at the moment, because these are environmental services - water providing an eco-system service. Of course you could argue that as you are using the river, you need to pay for it, in a way, but we need to improve our knowledge and approaches to determine the right price.

What about the energy sector? Nuclear power needs to extract water for cooling.

In a lot of member states they don't have to pay for the water they extract for cooling because they put it back into the river. Normally, there should be regulation to ensure that there are no negative ecological impacts. In this case you could argue that you do not need to pay for the water as such.

What about building dams and dykes?

These also make use of the water bodies and are areas where we can still improve our policies. But let's start with the more obvious areas - we have a lot of rotten infrastructure whereby water leaks into the ground, both drinking and waste water. The refinancing of the infrastructure is one of the big challenges in Europe.

Can you provide examples of how this is being done?

Leakage rates in Germany, for example, are very low, whereas in some areas of Southern and Eastern Europe they are pretty high. Some cities have up to 70% leakage rates - that is unacceptable. London also still has very high leakage rates - more than 30%.

Can you give any good examples of financing the infrastructure?

Good examples are of course where you have pricing policies that take this into account - the long-term refinancing of the infrastructure, because very often you just take into account the service at the moment. And that is of course the danger at the moment, because cities and communes in Europe are all under stress because of the financial crisis, and if on top of that you don't have a sustainable pricing policy, then you are running into trouble.

Can you single out any countries that are doing well or taking into account refinancing of infrastructure in pricing policies?

It is very difficult to say. Unsustainability is a very common problem in Europe.

On water efficiency, are there other areas of concern other than leakage?

Use in agriculture represents a 'low-hanging fruit' in the sense that we could use much better technologies. In many places we still have old technologies and we usually just flood the fields instead of using drip irrigation methods. These systems are more expensive, but if you have the right price for water, then farmers would immediately have the incentive to invest in it. But as long as water is cheap, farmers don't have any incentive to do so.

Another problem is that we have a lot of illegal abstractions. We have situations whereby farmers are emptying their wells without knowing whether their

water use is sustainable. Even in Belgium many farmers are directly pumping up groundwater, which is very slowly recharged. They have an abstraction licence for the individual well but the overall abstraction is too high for the ground water body.

Water efficiency is therefore not enough - you need to look at water sustainability. While farmers can use water efficiently, they can still be unsustainable.

Perhaps we need some kind of alert system to avoid draining resources without actually noticing.

Exactly. Monitoring by groundwater bodies is necessary and is now compulsory.

Are public authorities failing to monitor sustainability?

They did not have a holistic view on this. And this is also old practice - looking at the authorisations individually. You may well have five industrial plants that want to abstract water from a river basin and they are individually compliant, but in sum it can be too much for the river basin. And this is the new thing of the WFD: that the authorities check and regulate the effects on the entire basin.

I think that in some member states there is a lack of administrative capacity to monitor this, which is of course a bit worrying. Some older member states, such as Germany, are even cutting this capacity.

Is there any East-West divide on this?

We have a lot to do in the new member states - there is still a lot of untreated wastewater, and they still need to catch up with the EU legislation on waste water. And this is a huge challenge for them as well.

Is there any assessment of how much it will cost to rise to EU standards?

There are assessments for individual member states.

Also, more than 10 million people still lack sanitation in Europe, in particular in Eastern Europe. You have real health threats, for example in rural areas of Romania and Bulgaria, where people don't have any appropriate sanitation. We still have blue babies being born when they get drinking water from local wells which are heavily contaminated by nitrates from farm manure next to

it. So these types of situation still exist in Europe. You don't need to look to Africa to find them.

What opportunities and challenges do you see in integrating water issues into the upcoming Common Agricultural Policy reform? Do you think water is being sufficiently addressed in the current CAP or do you see shortcomings in it?

At the moment water is not sufficiently addressed in the CAP. That's very clear.

It needs to be addressed as a public good that needs to be much better managed by the agricultural side. We also need water to be better looked at in terms of cross-compliance in the CAP. We will have huge challenges with agriculture and water, but on the other hand we will have problems with global food security. FAO figures say we need to double food production globally by 2025.

70% of agricultural production happens on the 45% of irrigated fields. So if you want to increase production you need to improve irrigation, and here we come back to the need for new technologies. So, in the CAP we need to address both the food security aspects and the whole environmental security question - the soils, biodiversity and water issues - to allow farmers to produce sustainably. In the European Parliament you start to see this being reflected and this is encouraging.

Would this mean linking CAP payments to minimum standards in good water management?

Absolutely, we need to see this happen. We at EWP have developed a standard for sustainable water management for farmers. And the farming community is very interested in that because they see it coming. We will start in autumn with concrete farming communities to test it. This can then be a tool to be applied in the CAP reform.

I see that in particular the younger farming community is quite sensitive to this - while we see traditional farming associations as being a little bit in the 'old world', however.

Is there catching up to do on technologies for farmers?

Yes, not only in terms of water quantity but also in terms of quality - on how farmers use

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for example pesticides. And here we really need to look at product stewardship – that not only the application of a product on the field is improved but also the pesticide as such.

Water issues need to be looked at when developing pesticides. One of the problems is that while the pesticide as such could be fine, it goes through the soil, it gets degraded into other substances, ends up in ground water and finally in drinking water. Chlorinating water during the production process of drinking water could then result in hazardous substances.

And one of the big problems in Europe will be micro-pollution – from pharmaceuticals, but also from pesticides and nutrients. But this pollution from agriculture has very often to do with application of pesticides and nutrients. If they are applied on the field as regulated, according to the soil type, there is normally no problem.

While farmers are required to wash their equipment on the field, they may do it on the farm, allowing water including pesticides to enter canals and then they end up into the wastewater treatment plant and pass through. Even in big rivers such as the Rhine we can find pesticide concentrations that are too high.

And of course then there are the residues from pharmaceuticals, which will be one of the hot topics of the future.

Is there any EU legislation that addresses pharmaceuticals in water?

No, not really. And this is an area that has to be addressed in a much better way. But also more research on this is needed. One immediate measure would be to address waste water from hospitals. It needs to be collected separately.

But pharmaceuticals also get into the water cycle via households. One example is modern medical treatment methodologies where people don't stay in hospitals but go home. And we need to see how we address this, because I feel that this will be one of the big problems in the future – micro-pollutants go everywhere via many different pathways.

The big question is how you address this at the beginning and not at the end of the pipe. One part of the solution could be to address the water problems during the development of medicaments.

At least we need to improve our knowledge of these substances. Another part could be improved monitoring in the aquatic

environment and of the drinking water.

Are there ways to contain this kind of pollution?

I think that first we need to look at how big the problem is at the moment. So we need to improve the monitoring of it and see where the biggest sources are – is it really pharmaceuticals or is it something else?

What are the consequences of this pollution?

Some of these can be carcinogenic and can also have environmental effects. The worst is of course if it goes to drinking water.

There are some studies on whether men get less fertile. I also know about studies where fish had changes in bone systems – this was discovered when they no longer passed the fish filleting machine. But we need more research in this area.

And we know that this comes from micro-pollution?

It is very difficult to trace the origin of these problems but there is some evidence that it comes from micro-pollution. But here we need much more research and studies and more careful consideration of different sources and substances. And then perhaps we should look at this at the beginning, when we develop these substances.

What are the other big upcoming issues that you see in Europe and globally?

We will have availability issues in the South with climate change putting pressure on resources. The South and East will get drier and there will be pressure on the availability side.

We need to look at new ways of being more efficient.

Are there particular technologies emerging/gaining ground on this, such as desalination technologies becoming cheaper?

Desalination will play a role in the future but before you desalinate and increase the supply, you look at the demand side. It does not make sense to always increase the supply – this is an old policy.

What about a Japanese-**style bloc pricing system for water, or using water trading, like in Australia?**

The trading of water rights could be possible, but if then only within river basins. But first of all people really need to look at efficient and sustainable water management in their river basins. Water is very local, however, you cannot compare it with CO₂, and this is the big danger. This type of approach comes very much from the CO₂ policies. But water is very local and you first need to be sustainable at local level.

So you need to have local governance structures and pricing?

Yes.

But one of the future issues that needs to be looked at more carefully is land-use planning. Why do we need irrigated, high water-intensity vegetables in southern Spain? Wouldn't it be better to do something else there?

Land-use planning in the future is one of the key responses to water management - and to a lot of other things as well. And this is not something we are good at. And there is no EU legislation on this and Europe cannot look into that, because it is completely nationalised.

Land-use planning is also important with regard to flood prevention. You know how many cities have built into their flood plains? And then they wonder why they have so much damage. And on top of that people say this is all climate change...

The first ones to say this are the local and regional people responsible – who know they have done the wrong thing in the first place, but then blame flooding on climate change and ask for subsidies to repair the problems. While from the start the issue is wrong land-use planning and really bad city planning. And this is something we need to improve a lot.

Just to be clear: we will see negative effects of climate change in the future with regard to flooding.

What are you expecting from the Commission's water efficiency plans?

The Commission has announced a blueprint on water by 2012.

I hope it will look at our work on the water vision and the Water Stewardship Programme, because there are some concrete responses in there, which they could use. One thing is always the legislation, but you need to provide concrete

tools so that people can do it. Our stewardship approach, for example, has concrete tools that the industry can apply in their companies.

I hope that the blueprint on water looks at the Europe's water situation in a very holistic way and makes a very thorough assessment of what comes out of the WFD and the river basin management plans. That's the first step that the Commission has to take – a thorough assessment of what has already been done and then the same regarding the challenges.

Do you think that the Commission is going to propose a directive on water efficiency?

Yes – but only in buildings.

I think that in principle it's not a bad idea to look at water efficiency in buildings, but I'd hope that they look at water efficiency in a much broader way. Buildings can probably be a starting point but I think it is not the biggest point to start with.

Where would you start from then?

I'd start from water efficiency in agriculture. I would start with water efficiency and management in cities – to reduce leakage rates, etc. - and I would start on the awareness side.

In many member states, such as in Germany, you have very low water consumption. And this is not only due to the price - people consume less water because they think it's a good thing to save water.

Of course you can introduce legislation, but at the same time the awareness side is probably a much better and faster tool to boost a water-saving culture. This, because a Directive needs two or three years to be adopted, a couple of years to be implemented, and then a Directive on water efficiency in buildings need to be implemented very locally, and so on.

Is there a role for the EU on the awareness side or is it a local/national issue?

I think so, as the EU could provide much better tools for awareness-raising. They could really provide much better exchange of information. This is also what we try to do - we collect information from local and national campaigns and try to make it available to others, who want to do something similar. They could also provide finance for this type of local and regional activity.

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