Ecological economics for water policy and management: a need for major shifts in thinking

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Abstract Economics cannot be separated from values and ideology. Attempts to influence the political agenda by raising the fundamental issues of paradigm, ideology and institutions in various arenas are crucial. It is recognized that problems related to water quality and availability are linked with all kinds of activities and sectors in society.

Keywords Ecological economics; institutional change; sustainable development; water policy

Introduction

Humanity faces a number of environmental and development problems. Climate change, depletion of the ozone layer, loss of biodiversity, chemical pollution and degradation of water quality are some examples on the environmental side. Individuals in some countries or at some places suffer more than others as a result of the above-mentioned and other development problems. Poverty or “capability deprivation” (Sen 1999) is not only a matter of monetary income but is a multidimensional phenomenon and the links between environmental issues and poverty are increasingly discussed (Department for International Development, UK et al., 2002). While some efforts have been successful in improving human conditions and the state of the environment, the tendency in other areas is rather that things are getting worse (Commission of the European Communities, 2001; UNEP, 2002).

Why is this so? And what can be done about it? The first UN conference on environment and development was arranged in 1972 in Stockholm and others have followed. A follow-up conference in Johannesburg to the 1992 Rio de Janeiro conference takes place in late August and early September 2002. In the case of water policy, when summarizing the activities and recommendations of Stockholm Water Symposia over the years, Malin Falkenmark argued that there is still a need for “major shifts in thinking” (2000). The symposium of 2001 pointed in a similar direction (Water Science and Technology, 2002, Tortajada et al., 2002). Another result of recent international cooperative activities is a Ministerial Declaration of a conference on freshwater in Bonn (International Conference on Freshwater 2001). Water is seen as a “Key to Sustainable Development” and a number of recommendations in terms of governance, capacity building, participation, protection of ecosystems, etc. have been made.

While these are all important and meaningful steps, some fundamental issues have not yet been sufficiently addressed. As I see it, economics, more precisely neoclassical economics, is the most important theoretical perspective or paradigm influencing the mindsets (mental maps) of influential actors in present societies. A majority of these actors still seem to believe that development and welfare can be reduced to economic growth in GDP-terms, monetary profits for business companies and so on. When neoclassical economists discuss environmental problems they connect them with the possibilities of “market failure” and “government failure”. Market transactions may influence third parties negatively and in such cases “externalities should be internalised” and the “Polluter Pays
Principle” applied. Governments may subsidize activities that degrade natural resources and in such cases subsidies should be removed.

Such proposals are all worthy of consideration and the problem is rather that they too seldom are applied in practice. This may in turn be explained by other more fundamental “failures” in relation to some vision of a healthy development:

- paradigm failure
- ideology failure
- institutional failure
- failure of organizations as actors
- failure of individuals as actors.

Something may be wrong with the kind of paradigms, ideologies or institutional arrangements that have dominated for some time. As an example of possible “paradigm failure”, the conceptual framework of neoclassical economics is not the best to guide us towards Sustainable Development (SD). In terms of “ideological failures” it may be argued that traditional ideologies such as liberalism and socialism have not yet sufficiently “internalized” values connected with SD. “Market failure” and “government failure” as recognized by neoclassical economists is only a subset of possible “institutional failures”. Organizations such as business companies and Civil Society Organizations may fail, professionals may fail in specific respects and the total life-styles of individuals can be problematic from an environmental point of view. Fortunately, there are also examples of “success” and “good practice” in the above respects.

**Ecological economics**

Distinctions between “success” and “failure” as suggested above presuppose a specific value or ideological orientation. Although not completely clear, “Sustainable Development” as defined by the Brundtland Commission (World Commission on Environment and Development 1987) and as further articulated during the Rio process and preparations for the Johannesburg conference is such an “ideological orientation”. Implicit in it is a distinction between “sustainable” development and “unsustainable” development (USD). A considerable part of activities in Sweden or any other country now follow a USD-path and the challenge ahead is to bring an increasing share of activities closer to a SD-path.

Ecological economics can be defined as “Economics for Sustainable Development” or “Economics in the Spirit of Agenda 21”. Ecological economics is built on a commitment to work for SD as a basic value premise. No social science can claim value neutrality. Neoclassical economics, for instance, is science in some sense but at the same time ideology (cf. Myrdal 1978). While emphasizing economics and business management, the ecological economist is eager to learn about ideas useful for SD-purposes from any other discipline. Inter-disciplinary approaches, pluralism, i.e. open-mindedness to alternative theoretical or methodological perspectives are therefore further characteristics of ecological economics.

If ecological economics is economics for SD, then SD has to be defined. Building on the Brundtland Commission, I suggest that SD is:

- Multidimensional, where cultural and social dimensions in a broad sense, physical and ecological dimensions of various kinds, and financial or monetary dimensions of various kinds are considered
- Built on ethical principles, where not only the present generations in the “home country”, but also present generations in other countries as well as future generations at home and globally are involved
- Built on a precautionary principle, for instance in the sense that there is an ambition to
avoid irreversible damage to people and ecosystems even in cases where such negative impacts are uncertain

- Built on normal ideas about democracy, such as participation and open access to information.

Non-degradation of the state of the environment or of the natural resource base is a primary condition for SD in broader social and monetary dimensions to come true. Ecosystem services for human beings and other life forms are an essential part of this as is non-degradation of the ozone layer and other parts of the atmosphere and hydrosphere that are essential for life on earth. Non-degradation can similarly be an ambition for parts of the built environment and cultural heritage in various parts of the world. But also in this part, there are difficult ethical and ideological issues involved. Building a new infrastructure such as a dam for electricity and other purposes or a highway for transportation is normally at the expense of ecosystem services and other functional aspects. In any case, when considering planning options for a specific region from an anthropocentric point of view, ethical imperatives should include relationships between the present generation in the home region and present generations outside the home region, and finally between present generations in the home region and future generations outside the home region (cf. Figure 1).

Also the democracy aspect of SD needs to be elaborated upon. Ideally, democracy starts from a local level with as many persons as possible involved in an interactive learning process. All concerned should have access to essential information and, in addition to dialogue and co-operation, there should be fair competition between various ideas about a desirable future in local and global terms. Democracy means pluralism and recognition that there are different ideological orientations in society. Groups that at any time hold ideological orientations that depart from the dominant ideology should be encouraged as long as their opinions and behaviour does not negate democracy itself. Democracy furthermore includes a mutual control aspect. Citizens and specific professional categories such as journalists should watch all kinds of activities and point to behaviour that departs from laws and established norms in society. Specific Civil Society Organizations (so-called NGOs) may take a leading role in such attempts to speed up moves towards a SD-path (Edwards et al., 2001).

For the moment, I will only make one observation. SD is essentially discussed as a vision for development at the societal or macro level. But in my understanding, to make SD possible for society as a whole, individuals and organizations at the micro level also have to behave and act in a way that is compatible with SD. This means, as an example, that business companies have to replace their one-dimensional focus on monetary profits, shareholder value (and bonus systems in monetary terms for CEOs and board members).

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<tr>
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<th>Present generations</th>
<th>Future generations</th>
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<td>‘Home region’</td>
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<td>Other regions</td>
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*Figure 1* Ethical considerations should not be limited to the present generation in the home region but should be extended to also cover a global level and future generations.
with some multidimensional ideas of performance. Something has happened in positive terms, for instance the recent debate about Social Responsibility of Business and the institution of Environmental Management Systems. Some companies take a leading role in this new development but the main idea of business policy and practice is still one of more or less institutionalised “monetary reductionism”.

If SD is connected with moves towards a strengthened democracy as suggested above, then a lot remains to be done also at the level of organizations. As an example, small shareholders in big companies could hardly be happy with the present state of affairs in this respect.

**A conceptual framework for sustainable development**

Assuming now that “business as usual” in terms of paradigm, ideology and institutional arrangements will not be enough to guide us towards SD, then we need to consider ways of consciously modifying or changing our mental maps or conceptual frameworks. The idea is then one of presenting a conceptual framework that is understood by actors in various roles and positions as being more useful in furthering the idea of Sustainable Development. In what follows, I will point to concepts at the micro level that together form the embryo of a new microeconomics, which in turn opens the doors for new thinking at the macro level. In many ways these ideas are in line with the conceptual framework that is emerging as part of the previously indicated water policy discourse.

**Political economic person and political economic organization**

Economic Man is the cornerstone of neoclassical economics. Economic Man is exclusively related to a market context and the individual is essentially seen as a consumer maximizing utility subject to a monetary budget constraint. While it is difficult to question a statement that man maximizes utility in some sense, it is equally true that such a statement is rather empty and uninteresting in relation to present environmental and development issues. Our interest is rather to find out how individuals differ with respect to their ideological orientations and life-styles. To what extent is the ideological orientation of a specific individual compatible with the SD-ideas as previously defined? As an alternative more in line with institutional theory, a Political Economic Person is proposed\(^1\), i.e. an individual with many roles (professional, consumer, citizen, parent, etc.) and relationships who is guided by a political or ideological orientation. While self-interest is a dominant feature of Economic Man assumptions, it is here assumed that a healthy individual has a strong ego but that he or she at the same time has the ability to more or less internalise the interests of others. Amitai Etzioni speaks of an “I & We Paradigm” (Etzioni, 1988) according to which each individual is part of a number of “we-categories”. As a person, I may be concerned about my family as a we-category, colleagues at my workplace as another we category, my hometown, my region and to some extent even the global society. Our PEP is a responsible actor who through networks and organizations can influence development processes at various levels.

In the business management literature, alternatives to the neo-classical profit-maximizing firm have been available for some time, e.g. a stakeholder model of organizations. Stakeholders are those concerned or those who have something “at stake” in relation to a specific decision situation or the activities of an organization. Pointing to different categories of stakeholders such as shareholders, customers, employees, board members with managing director, people living in the neighbourhood, etc. is already a step forward in

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\(^1\) Political Economic Person and other parts of this alternative microeconomics are outlined in Söderbaum (1999 and 2000) and are discussed for instance by Jakubowski (1999, 2000). A concept that is close to PEP, Homo Politicus, has been suggested by Faber et al. (2002).
admitting that some conflicts of interest are normally involved in decision making about
investment projects or operational activities. As part of presentations of the stakeholder
model, there may still be a tendency to pack together all shareholders, all employees, etc.
into homogenous categories while we all know that not all shareholders (or all employees)
have the same interests. As a way of allowing for such differences between individuals as
actors, the Political Economic Organization (PEO) is proposed. A PEO is composed of a
number of individuals as PEPs which means that the organization is regarded as “polycen-
tric”, each individual being represented with her or his particular roles, relationships and
ideological orientation. In a business company or other organization that takes steps in a
green direction by becoming certified according to ISO 14001 and in other ways, some
individuals take the lead and become “environmental entrepreneurs” while others tend to
be followers.

While a “firm” according to neoclassical theory is presented as something separate from
other firms and from consumers, the present network approach suggests that the same indi-
vidual is an actor within, or in relation to, more than one organization or network and that
individuals as well as organizations may cooperate for specific purposes (cf. the mentioned
I & We Paradigm). The actor (individual or organization) is embedded in various co-
operative relationships and networks with other actors. Two organizations as actors may
compete in relation to some activities (technological development and market penetration)
and cooperate in relation to others (lobbying activities in relation to regulatory entities,
such as the European Union).

**Concepts of economics and efficiency**

SD as previously described is not a completely clear vision but it suggests certain directions
for development at the macro and micro levels. Ideas connected with SD may more or less
influence the ideological orientations of specific actors in government, business and civil
society. To the extent that SD with its imperatives of democracy is taken seriously, a multi-
dimensional and ideologically open idea of economics and efficiency will emerge. Monetary
dimensions will still be important in our market economies but the attempts to reduce non-
monetary impacts to their alleged monetary equivalents will lose in terms of relevance and
legitimacy. In addition to the distinction between monetary and non-monetary impacts, a dis-
tinction is here made between variables expressed as flows (referring to periods of time) and
as positions or states (referring to points in time). This is illustrated in Figure 2.

Among examples of monetary flows (category I), Gross Domestic Product (GDP), the
turnover and profits of a business company or the salary of an employee can be mentioned.
The assets and liabilities in monetary terms of a business company at the beginning or end
of an accounting period exemplify monetary positions. The discharge of a pollutant such as
mercury to a nearby lake is an example of a non-monetary flow while the ppm of mercury in
fish caught in the lake at a point in time is a non-monetary position. All four categories of
impacts should be kept separate in economic analysis. In relation to SD, non-monetary
variables play a crucial role and especially parameters in terms of positions or states are
essential for judgements about changes in welfare. How is the stock of fish of various
species changing in a lake from one point in time to another? What happens to groundwater

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<th>Flow (referring to a period of time)</th>
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<td>Monetary</td>
<td>II</td>
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<td>Non-monetary</td>
<td>IV</td>
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**Figure 2** A classification of variables in measuring resources and impacts for purposes of economic analysis
quality over time at a place? Such series of positions referring to relevant objects of description will tell us a lot about changes in the state of the environment, changes in the health of human beings or of ecosystems. In this part our argument is in line with the focus on the “state of the world” in the annual reports by the Worldwatch Institute (e.g. Brown, 2001).

Cost-Benefit Analysis with its ideas about efficiency at the societal level and its one-dimensional and ideologically closed ideas of values will no longer be accepted. The scepticism in relation to CBA expressed by the World Commission on Dams (WCD, 2000) represents an important step. In a democracy, scientists (economists) have no right to dictate correct values for societal resource allocation (Söderbaum, 2001a). The purpose should instead be one of illuminating an issue for actors of different ideological orientations. Here approaches such as Positional Analysis in terms of multidimensional impact profiles for alternatives considered and a “matching” idea of decision-making is an option (Söderbaum, 2000). The analyst who takes democracy seriously has to consider more than one ideological orientation and formulate his conclusions accordingly.

**Views of market and non-market relationships**

In any attempt to outline a microeconomics more in line with Sustainable Development, our ideas about markets also have to be involved (Figure 3). Here neoclassical economists stick to mechanistic ideas about supply and demand for specific commodities. This model focuses on prices in monetary terms and quantities exchanged and it certainly has some explanatory value. But since the efficiency of markets in allocating resources is an open issue as previously discussed, the tendency to extend monetary business and market thinking to new areas has to be scrutinized carefully. Will we get a better world by, for instance, exchanging “water use rights” or “pollution rights” in markets? (Cf. Simpson and Ringskog 1997). Secondly, for that part of activities where markets can play a positive role, other models of market exchange than the supply-demand model have to be developed and considered. A market can be regarded as a multifaceted relationship between market actors where social aspects and history plays a role (Ford, 1990). As an example, business-to-business market relationships are often better understood if one focuses on cooperating market actors (as Political Economic Persons) and how they relate to each other (commitments, trust, etc.) rather than exclusively on self-interested actors buying and selling commodities at specific prices. As part of such social relations the power positions and

![Figure 3](https://iwaponline.com/wst/article-pdf/47/6/63/422625/63.pdf)
ideological or ethical orientation of each market actor become relevant. Prices are judged in relation to the ideological orientation of each market actor in terms of their “fairness” and “reasonableness” and not just as a matter of maximization of self-interest by atomistic actors.

The recent debate about the World Trade Organization (WTO) furthermore suggests that there is a “one-commodity fallacy” in neoclassical microeconomics as well as neoclassical international trade theory. Trade in a national or international context is about much more than quality and quantity of product with connected prices. In the case of agriculture it has been recognized as part of WTO negotiations that the welfare and culture of individuals and collectivities are influenced in a number of ways, local landscapes and other aspects of natural resources included. “Multifunctionality” has emerged as a key concept in understanding this complexity (OECD, 2000). Others point to a “public goods” aspect of almost all activities and exchange relationships (Kaul et al., 1999). In my judgement traditional international economics textbooks will have to be rewritten to become relevant to the world in which we live (cf. Gillespie 2001). But I also recognize the ideological character of present texts and therefore the reluctance in some circles to open the doors for new thinking.

**Actors, agendas and arenas for social and institutional change processes**

Institutional theory is helpful in understanding social change processes. An Actor-Agenda-Arena approach based on PEP-assumptions points to the importance of ideological orientation and the theoretical perspectives or conceptual frameworks used in interpreting various phenomena. Any attempt to get closer to a SD-path will involve changes in conceptual framework, language and connected interpretations. This can be illustrated by reference to the example of an increased number of business companies being certified according to ISO 14001. A business company is in itself an “institution” and for a long time many are those who have interpreted it as a “profit-maximizing organization”. Neoclassical economics preaches such an interpretation and business management literature and journalism tend to point in the same direction. At some stage – as a result of the initiatives of some actors connected with business – Environmental Management Systems such as ISO 14001 did appear on the scene as an “institution” in itself. An increasing number of individuals understand the meaning of an EMS, which means that the institution is strengthened. But the fact that some companies are certified according to ISO 14001 may in turn change our understanding of the business companies being certified. A certified business company is interpreted as being different from companies that are not certified. The institution of “business company” is then understood in broader terms. It is not only a matter of monetary profits but also of environmental performance. One may speak of a competition between the “old” interpretation and a newer one.

Three aspects of such institutional change processes are relevant, i.e. interpretation, legitimation and manifestation. Changes in interpretation is just one among many processes. An “institution” becomes strengthened or more established to the extent that it becomes manifested in symbols or concrete behaviour among an increasing number of actors. Through all three processes “institutionalisation” or “deinstitutionalisation” may take place. Institutionalisation here refers to an institution that becomes strengthened and more established among actors, while deinstitutionalisation refers to a situation where an institution over time is losing its support and finally may become out-competed by other institutions.

As another example, a specific version of ecological economics can become more institutionalised over time through manifestations in terms of international and regional organizations, journals, articles, conferences, educational programs, professorships, and so on. Ecological economists contribute to public debate on environmental and development
issues and each such contribution is part of a broader evolutionary process where the poli-
cies and actions of various actors are shaped.

The present Actor-Agenda-Arena approach (see Söderbaum, 2001b) can be summa-
rized as follows:

• Political Economic Person assumptions
• Emphasis on relationships between Actors who – with their specific ideological orienta-
tion or Agenda – appear in specific Arenas
• Emphasis on the conceptual and interpretative aspect of “ideological orientation”
• Dialogue, search for consensus, conflict resolution and other aspects of interactive
learning
• “Institution” and “institutional change” are defined in interpretative, legitimation and
manifestation terms
• An assumption of heterogeneity of “ideological orientation” in each conventionally
defined actor category (farmers, business leaders, university scholars, etc.)
• A search for commonality in ideological terms by building networks and alliances within
and across conventionally defined actor categories.

Only the heterogeneity assumption will here be further explained. In neoclassical theory,
more precisely public choice theory, an assumption of homogeneity is made concerning
farmers as a category, bureaucrats as a category, etc. This positivistic theory is of some inter-
est but our more normative and interpretative approach suggests that also differences within
each category (farmers, bureaucrats or business-leaders) are of interest. Some farmers (busi-
ness leaders) are concerned about environmental issues while others are not. Actors with a
similar ideological orientation but belonging – in conventional terms – to different actor cat-
egories may work together as part of a common Sustainable Development strategy.

“Ecological modernization” is not enough

All kinds of measures to improve environmental and social performance at different levels
should be encouraged and small changes in the direction of a sustainable society could be
part of more radical transformation processes. But the obstacles in front of us should not be
underestimated. I will here make an admittedly simplified distinction between three ideo-
logical orientations – with connected response patterns – in relation to environment and
development.

A. “Business as usual”. Statements about the existence of environmental and social prob-
lems are generally exaggerated. To the extent that such problems exist, they can easily
be handled within the scope of a continued emphasis on economic growth, technologi-
cal innovations and global market penetration. No change in dominant paradigm, ideol-
ogy or institutional framework is needed. Response pattern: “If we do not speak about
the problems, then perhaps they do not exist.” “To the extent that they exist, they will be
taken care of by the in-built mechanisms of our present market economy.” “Public
Relations campaigns and lobbying will make people focus on traditional parameters
and forget about environmental problems”.

problems of a serious and in some respects new kind. In all organizations, management
systems have to be modified to allow for this new situation. While action is needed at all
levels from the individual, organization, local government, national government to the
global level, present dominant paradigms, ideologies in business and elsewhere need only
be modified and “modernized” to allow for the new situation. Response pattern: “Yes,
there are problems but don’t worry, things are under control.” “The Social Responsibility
of Business will be reconsidered.” “Voluntary Agreements, Environmental Management
Systems, Environmental Labelling etc. will do it.”
C. “Radical interpretation of SD”. According to this ideological orientation, a major shift in paradigm, ideology and institutional framework is needed. Modifying paradigm, ideology and institutional framework that now hold dominant positions may get us closer to a SD-path but will not be enough. Sustainable Development as ideological orientation has to be taken seriously and a “major shift in thinking” is indispensable. Response pattern: “We need other conceptual frameworks in economics as part of a pluralistic and democratic philosophy.” “Competition is preferred to the global neoclassical monopoly or cartel at university Departments of Economics.” “Individuals and organizations alike need to reconsider their ideas of progress for themselves and in society.”

As an example of the “Business as usual” attitude, I like to point to a recent advertising campaign by the Confederation of Swedish Enterprise (May 2002) where welfare is exclusively connected with economic growth in GDP-terms and where the main concern is Sweden’s position when compared with other countries in a welfare-league as measured in GDP-terms. Not one word is said about the environment or broader ideas about welfare such as Sustainable Development. I do not say that the Confederation of Swedish Enterprise completely neglects the debate about SD – they have in fact recently employed a person to take care of these issues – but to judge from their advertising, web site etc., SD is not a big issue for them.

“Ecological Modernization” as ideological orientation is described by Marten Hajer (1995) as follows:

“Ecological modernization … uses the language of business and conceptualises environmental pollution as a matter of inefficiency, while operating within the boundaries of cost-effectiveness and administrative efficiency” (Hajer, 1995, p.31)

“Ecological modernization explicitly avoids addressing basic social contradictions. [It] does not call for any structural change but in this respect, basically a modernist and technocratic approach to the environment that suggests that there is a technoinstitutional fix for the present problems.” (Hajer, 1995, p.32)

“In the most general terms, ecological modernization can be defined as the discourse that recognizes the structural character of the environmental problematique but none the less assumes that existing political, economic, and social institutions can internalise the care for the environment.” (Hajer, 1995, p.25)

This ideological orientation is here exemplified by WBCSD, the World Business Council for Sustainable Development. This is a coalition of 140 international companies working for economic growth and Sustainable Development. While “sustainable growth” in GDP-terms seems to be a top priority, there are also some openings in publications from this organization:

“A growing number of business leaders realize that to achieve market success they must honor a changing array of environmental and social responsibilities…As business leaders, we understand and respect the workings of the market. But we know that the market is not some ruling entity separate from human activities.” (WBCSD, 1997, p.56)

“The media and consumers are becoming too sophisticated to allow companies to pretend; they expect real corporate action.” (WBCSD, p.51)

Proponents of our third ideological orientation, “Radical interpretation of SD” – which would entail major shifts in paradigm, ideology and institutional framework – can be found in many professional and other categories but is perhaps best associated with Civil Society Organizations, for instance the French Attac movement with actors such as Susanne
George (2000) and René Passet (2000). George and Passet both point to Neo-Liberalism and neoclassical economics as part of the problem and the same is true of David Korten in his book “When Corporations Rule the World” (2001). In relation to water issues, feminist perspectives may add to our understanding (Tortajada, 2000; Shiva, 2002) Also fiction writers can provide a different conceptual and ideological perspective (Roy, 2001) and thereby contribute to our understanding of issues such as dam building. As exemplified by Jeremy Leggett’s study of climate change negotiations (1999), persons who combine scientific knowledge with journalism can similarly make the behaviour of various actors on the local or international scenes more visible. It need not be added that many ecological, social, feminist and institutionalist economists belong to this category.

While there is still some room for the third more radical interpretation of SD, actors with “Business as usual” or “Ecological Modernization” attitudes tend to dominate the scene these days. Trans-national companies and politicians with a Neo-Liberal orientation have been successful in defining the problems and influencing the development dialogue. There is even a tendency that traditional ideas of business being regulated by national governments and through international agreements between national governments have been replaced in favour of a situation where business is controlling and regulating national governments. The Transatlantic Business Dialogue (TABD) is an example of this trend. Transnational corporations in the US and in the European Union claim specific rights to accept or not accept political proposals that concern them and also have specific channels to the US Government and administration and the Commission of the European Union, respectively.

More power to business organizations that essentially still are governed by monetary principles will not give us sustainable development either at the regional or the global level and is hardly in the interest of business itself. A global world ruled by the international business community is for many of us not much better than the Soviet type planned economies of the past. Our democracy is based on some division of power and does not permit any coalition of organizations to take over leadership and control. In the recent past we have seen cases of big business failure and mis-management. This has led to reactions by Civil Society in different parts of the world. It is quite probable that at some stage more power to business will undermine the power of business itself.

By this I do not want to say that business is the only culprit or make general statements about business actors. I want rather to return to the previous Actor-Agenda-Arena framework and its heterogeneity assumption. Proponents of a radical interpretation of SD can be found in any category of actors and also among professionals in business. Similarly, universities and professionals as actors within universities differ in their ideological orientations. And a lot remains to be done in universities before one can claim that environmental and development issues are taken seriously. The “Business as usual” attitude is as common in university circles as elsewhere.

**Implications for water and non-water policy**

The “international water community” certainly has taken important steps in the directions here indicated. It is also recognized that problems related to water quality and availability are linked with all kinds of activities and sectors in society. Water policy has to be integrated with agricultural policy, industrial policy, etc. to reduce pollution from various activities and thereby improve water quality. In this sense, to solve water problems, there is a need for a “non-water policy” (Figure 4). A large number of chemicals such as synthetic hormones, antibiotics and pesticides (cf. Wolfe, 2002) continue to pollute surface water and ground water in different parts of the world in the name of rationality and efficiency. Could these problems be handled at all within the scope of a traditional conceptual framework and
development ideology? An increasing number of actors furthermore understand that there is a global aspect of local activities.

This means that actors at local and national levels need to engage in formulating their “global water and non-water policies” (Figure 4), which in turn points to the need for cooperation in different forms and for international agreements (Porter et al. 2000). While there is always a global aspect of water policy, it is equally true that water policy and water management begins at the local or regional level. A “regional” level may refer to administrative borders or to a river basin or catchment area. For river basins, Sustainable Development can be a guiding principle as exemplified by a study by Ahmad et al. (2001) for the Ganges-Brahmaputra-Meghna Region.

Concluding comments
In this essay, I have emphasized that social science – and economics in particular – cannot be separated from values and ideology. We are all – scholars and other actors – Political Economic Persons. One among the criteria for being “scientific” is actually that one openly discusses how values are involved in a study. According to Amartya Sen (1987), economics has followed an “engineering tradition” rather than an “ethical tradition” and it is now time to reverse this trend. The economic growth debate over the years (Friman, 2002) or the debate about international trade theory and the WTO is not just a matter of truth in some scientific sense but as much a matter of ideology. Such debates cannot be left to economists whose main interest too often seems to be to protect their neoclassical paradigm. Other professionals and politicians have to participate in this dialogue rather than assume that the expertise of university scholars also includes ideology.

Like other actors we are, as scientists and teachers, part of a democratic society and have an important critical role in relation to SD-policies. Such a critical role may be more easily accepted if one recognizes that there is no apolitical science. Approaches to management and decision-making are important parts of possible contributions from research as is impact assessment. But a focus on individuals as actors, their ideological orientation, roles and relationships as well as institutional arrangements seems to be equally promising in the present situation. Tape-recorded interviews with actors related to an issue can facilitate self-reflection and sometimes dialogue and action. And in our respective roles, attempts to influence the political agenda by raising the more fundamental issues of paradigm, ideology and institutions in various arenas are crucial. In fact the present international consensus on Sustainable Development among a large number of actors leaves a lot of room for efforts of this kind.
References


