

BERARDO CORI

AN OVERVIEW

1. *An introductory remark.* – This session considers the wide and increasing range of human activities both as they contribute to, and as they are affected by, Global Environmental Change: that is, both the human causes, and the human consequences of it (Stern et al., 1992). We are working within the framework of HDP and are inspired by the goal which is to contribute to an informed long-term sustainable use and development of the Earth's system. We also believe that «if our current knowledge of the physical manifestations of Global Environmental Change is considerable, comparatively little is known about its anthropogenic causes» (Price, 1990, p. 8). And causes of anthropogenic change in landscape variables deserve careful examination.

2. *Why «regional»?* – Global Environmental Change by definition concerns the world community as a whole. But «global change» means that everything changes, not necessarily over the whole globe... As stated by Jacobson and Price (1990, pp. 14, 55), «our research must be conducted at all geographical scales» because «actions at the local level can cause global change, which in turn will have differing effects in differing locales». «All global-scale, human-induced changes originate from local activities: some have direct global effects, while others may begin as local disturbances and take on global significance because of their expansion» (Mather & Sdasyuk, 1991, p. 152). Moreover, regional research is indispensable to achieve sustainable levels of development for different regions. It is at the scale of a region or an urban agglomeration that much of the anthropogenic change is being generated. It is clear, then, that the accumulation of case studies of similar phenomena in a large number of countries is very useful for comparative analysis.

3. *Why the Mediterranean?* – a) As everybody knows, the Mediterranean (including the Black Sea) is located midway between subtropical and temperate latitudes and poses a true challenge for environmental understand-

ding. It has been deeply affected by natural and social processes which are also closely relevant to global-scale referred processes. It presents a major contrast between the northern, southern and eastern shores. Surrounded by more than twenty nations with different cultures, traditions, and economical levels, and with roughly 400 million inhabitants, this region poses a severe test for integrated policy and resource management.

b) This «Mediterranean complexity» is one reason why the Mediterranean region is almost always present in the world's ecological-economic regionalisations, prepared both for scientific and political purposes: the Mediterranean Action Plan (1975: see Vallega, 1994), UNEP Regional Seas Programme (1982), the Blue Plan (1989: see Grenon & Batisse, 1988), IGBP regional research network (1991: see Frassetto, 1993), Mather-Sdasyuk classification (1991), Agenda 21 for the Mediterranean (1993), the Barcelona Convention (renewed, amended and extended 1995) and so on.

c) Last but not least: Italy has a central location with respect to the whole Mediterranean basin, and now has a new label as a target country for immigrants. So Italy offers a good viewpoint as regards socio-environmental change.

4. *Why these five selected themes?* – The papers following this overview will deal with physical, industrial, human/demographic, and urban change, and the perception of change itself. These five topics, in my opinion, are among the most crucial ones in the framework of Global Environmental Change; they also partly correspond to the themes studied by some of the most advanced research units of the Italian HD Programme (see Bianchi, 1994; Cortesi, 1995; Scaramellini, 1995). A brief account of their main results is anticipated here.

5. *Physical change.* – In many areas of the Mediterranean basin, the use of natural resources by man began in proto-historic times. This meant: a) a considerable erosional loss of soil; b) the strong selection of endemic animal species, with the disappearance of some, and the introduction of many allochthonous species; c) changing landscape and climate through deforestation; d) the reduction of both storage water and natural surface runoff; e) many types of natural catastrophes (volcanism, tectonic activity, seasonal flooding regimes of many rivers...).

But the most critical element for Mediterranean sustainable development is water. We are running the risk of both critical water shortages and degraded water quality. And if global climate change is going to produce alterations in sea level or rainfall, we are also at risk.

6. *Industrial change.* – Transformations in industrial growth, closely tied to patterns of energy use, are in progress in the Mediterranean, where at present processes of de-industrialisation and re-industrialisation, of the acquisition of new autonomies and continuing dependence are juxtaposed

and contrasted. Some processes of «eco-restructuring» are being undertaken, aimed at pursuing a greater ecological efficiency. But in the meantime, companies located in Mediterranean industrialised countries tend to decentralise their dirtiest manufacturing stages to less industrialised ones, where ecological norms do not exist or are applied more tolerantly.

7. *Human/demographic change.* – Population changes, both structural and locational, are a driving force in bringing about Global Environmental Change (Jacobson & Price, 1990). In the Mediterranean area, we now have a drop in the birthrate and an unprecedented extension of human life on the northern side, where the traditional demographic pyramid is modified and reduced at the base, and an unprecedented rise in the population on the southern side. Hence a strong increase in migratory flows from south to north, where Italy has become the centre of gravity, intercepting a lot of those flows: immigration has taken on such features and dimensions that it can no longer be considered as temporary, but as a structural part of Italy's economy and society. Moreover, population density of coastal areas is growing faster than in the rest of the Mediterranean countries; and another evident feature of human/demographic change is linked to increasing daily and seasonal population mobility.

8. *Urban change.* – The urban question must be considered the most important of all environmental problems. It is well known that progressive urbanisation of modern society has various environmental consequences, such as the reduced coefficient of precipitation infiltration, atmospheric pollution, asphalt cover effects on living beings in urban soil (Gerasimov & Lappo, 1984), as well as the conversion of other types of land to urban uses. Land use, as we know, is a critical topic in Global Environmental Change, and change in land cover/land use is a crucially important issue (see Turner et al., 1995): in the Mediterranean we are mainly seeing a rural-to-urban land use change, especially in coastal zones. This rural-to-urban transformation involves, as noted above, a growing mobility, both local and imported (tourism): the number of vehicles is growing, and with them, the impact of atmospheric pollution and urban congestion. In such a situation, planning livable urban conditions is far from easy along the Mediterranean coasts.

9. *Perception of change.* – People respond to the environment not as it is but as it is perceived (Pawlik, 1992). It is clear that individuals' assessment and perception of Global Environmental Change are influenced by many interacting factors, including their individual attributes, their cultural background, their social, economic and political setting (Jacobson and Price, 1990). And what about procedures of risk assessment, that is identification, measurement, and characterisation of threats to human welfare? Different social actors and different cultures – as the example of the Mediterra-

nean shows – have different representations of environmental risks and, therefore, of protective measures to impede those risks.

REFERENCES

- BIANCHI E. (ed.), *Global Change perception*, Milan, Guerini, 1994.
- CORTESI G. (ed.), *Urban Change and environment*, Milan, Guerini, 1995.
- FRASSETTO R. (ed.), *Managing the Mediterranean*, Venice, Ist. Grandi Masse C.N.R., 1993.
- GERASIMOV I. and LAPPO G., *Ecogeographical problems of big cities*, in *Problems of the environment in urbanized regions*, Moscow, USSR Acad. of Sciences, 1984, pp. 6-13.
- GRENON M. and BATISSE M., *Le Plan Bleu*, Paris, Economica, 1988.
- JACOBSON H.K. and PRICE M.F., *A framework for research on the Human Dimensions of Global Environmental Change*, Paris, ISSC/UNESCO, 1990.
- MATHER J.R. and SDASYUK G.V., *Global Change. Geographical approaches*, Tucson, The Univ. of Arizona Press, 1991.
- PAWLIK K., *Perception and assessment of Global Environmental Conditions and Change: Report 1*, Barcelona, HDP Secretariat, 1992.
- PRICE M.F., *Report of the ISSC Symposium on the Human Dimensions of Global Environmental Change*, Paris, ISSC/UNESCO, 1990.
- SCARAMELLINI G. (ed.), *Sustainable development of mountain communities*, Milan, Guerini, 1995.
- STERN C., YOUNG O.Y. and DRUCKMAN D., *Global Environmental Change. Understanding the Human Dimensions*, Washington, National Academy Press, 1992.
- TURNER B.L. II et al., *Land use and land cover change. Science/Research Plan*, Stockholm-Geneva, IGBP-HDP, 1995.
- VALLEGA A., *Recent developments and announcements. MAP: which future?*, in «Ocean & Coastal Management», Amsterdam, 23, 1994, pp. 271-279.

Department of Environmental and Spatial Sciences, University of Pisa.