## EV5V-CT92-0138

# LANDSCAPE AND LIFE: APPROPRIATE SCALES FOR SUSTAINABLE DEVELOPMENT

## SUMMARY FINAL REPORT

**JUNE 1995**

**Key words :**: Appropriate; dis-embedded structures; discretionary reach; distantiation; genre de vie; landscape; scale; socially-constructed space; subsidiarity; values.

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## I. OBJECTIVES:

Following on from a definition of sustainable development as the successful harmonisation of social, economic, and ecological values, the LLASS project had the following objectives :

Scientific :

- To explicate, from the perspective of sustainability, processes of change in landscape and life within contrasting European regions during 1950-90
- To co-ordinate a network of case studies on scale transformations in landscape and life during 1950-90 with starting points in four specific settings: Saarland in Germany, South Tipperary in Ireland, the Amsterdam region in the Netherlands, and Skåne in Sweden.
- To develop common enquiry frameworks which could yield a broader understanding of resource use and its implications at various scales from local to global
- To emphasise social and spatial interaction patterns at various scales with a focus on conflicting interests, intentions and strategies of the main actors
- To highlight issues of scale and appropriateness in the understanding of tensions among economic, social, and ecological values in taken-for-granted ways of life.
- To document the differential impacts of (a) market-orientation and technological development, and (b) policy measures, on processes of change in selected regions.
- To develop sound empirical bases for the mapping and understanding of environmental conflict triggered by technological, economic and political developments.

Practical :

- To evaluate social and ecological consequences of selected policy measures, their scientific (theoretical) underpinnings, and relation to market forces during 1950-90
- To assess the effectiveness of past policy measures in the light of (a) scale modulation ("top-down"), and subsidiarity ("bottom-up"), and (b) lateral processes of information flow from official, scientific, and media sources.
- To identify criteria of appropriate scale for the framing and implementation of contextually-sensitive environmental policy.
- To facilitate cross-disciplinary and cross-cultural dialogue on challenges of environmentally sustainable development in the 1990s.

## II. METHODOLOGY

Study site selection was designed to demonstrate the differential impacts of post-war developments on a biogeographically and culturally diverse Europe, incorporating case studies in two of the founding member EU "central" Member States (Germany, Netherlands), one in a later "peripheral" state (Ireland), and one which was prior to 1995 at the threshold of entry (Sweden). The analytical foci varied in scope: Irish, Swedish and Dutch teams concentrated on micro-regional scale studies of changes in agriculture, while the German team focused on issues of energy, with Saarland as a starting-point, tracing impacts of energy policy from local to transnational scales. Methods within each case study sought to highlight (a) tensions between economic, social, and ecological interests in changing landscapes and life between 1950-90; (b) cultural differences in the interaction between ways of life and landscape; (c) the scale horizons within which policies have been most effective in negotiating conflicts related to sustainable development.

Scale and appropriateness were terms used to emphasise the importance of context in the design and implementation of policy. While changes of scale-spatial, temporal or functional - were measured and mapped on the basis of "objective" data, the question of appropriateness was studied both in terms of (a) the "subjective" experiences and dispositions of people in particular areas and (b) scientific opinions on ecological and economic sustainability. Methods therefore included both conventional scientific as well as interpretative approaches to the understanding of livelihood practices and their relationships to resources within these specific European regions. The interlinked phases of analytical enquiry at all sites were: (i) Landscape transformations, (ii) socio-spatial interactions and environmental experiences *[genres de vie*], (iii) scales of discretionary reach, and throughout the project, emphasis was placed on (iv) dialogue and communication, facilitated primarily by the LLASS cross-disciplinary forum, hosted at University College Dublin.

Landscape Transformations : The concept of landscape, as used here, implies more than scenery or morphology. Landscape is regarded as the interface between nature and technology, the arena within which interactions among economic, social, and ecological processes are registered. The first phase involved analyses of changes in land use, land tenure and landscapes as texts to be critically read in terms of tensions between external and internal forces: those of market- or policy-driven changes on the one hand, and those generated within local and regional life on the other. Data sources included aerial photographs, cartographic and geographical survey records, land registry records, census and parish records. Field observations, interviews with local residents and advisory services supplied data on the most significant events and policies which had affected the areas during the period 1950-90. Results at all sites indicated (a) clear variations among bio-physical settings; (b) sharp differences in land ownership and use; (c) the impact of functional specialisation, particularly in agricultural and energy sectors, on regional ecology and social life.

Socio-spatial Interactions and Environmental Experiences [*Genres de vie*] : The second phase explored the more dynamic aspects of interactions between ways of life and landscape at various scales. This involved, on a macro level, systematic enquiry into the scale expansion in food and energy production and its trans-national implications; and on a micro level, enquiry into changes in everyday ways of life and landscape. Here the classic geographical notion of *genre de vie* elucidated tensions between sectoral and area-based livelihood interests, and important cultural differences among the four study sites. The value of the concept lay in its integrative character: whether sector (economic) or area-based, every *genre de vie* has an associated set of (a) values, perceptions and attitudes (identity), (b) behavioural/functional features (order), (c) relationships to resource base (niche), and (d) spatial-temporal reach (horizon). On both lines of enquiry, scrutiny of documentary sources was supplemented by questionnaire surveys and interviews with decision-makers within corporate structures as well as with individuals who had witnessed the transformations in life and landscape since the 1950s. Analysing data from these sources, a common typology of *genres de vie* was established to facilitate comparisons and to highlight differences in attitudes toward environment among case study sites. Criteria for appropriate scale for each of the study sites were sought in terms of that horizon within which the frequently conflicting interests of areal and sectorally-based *genres de vie* could be negotiated.

Scales of Discretionary Reach : The third phase returned to issues of territorially-based administrative structures, and their capacities to handle environmental issues in a democratic manner. The term “discretionary reach” was used to describe the spatial and institutional realm within which people had access to resources, information, decision-making, and responsibility for landscape and life. Initially the focus was on distinctions between “top-down” (formal) versus “bottom-up” (informal) initiatives. Cutting across these distinctions, however, were spatial differences between movements and organisations which were initiated from within a particular region, versus those which have been introduced from without (the outside), e.g., policies and programmes introduced by authorities or “development” agencies, industry, environmental movements and global trends. In many cases, it was the convergence of impulses from various sources that have led to decisions and action. The efficacy of such movements in promoting participation in political decision-making over environment and resource use and the implications of such decisions for sustainable *genres de vie* were also evaluated. In each study area, an effort was made to identify the administrative scale at which the modulation of relevant policies had been most effective.

Communication : Throughout the two year period, special attention was given to communication, and to barriers between diverse disciplinary and cultural interests. The challenge of communicating insights across diverse interests within each study site, and even among the four teams, was regarded as analogous to the wider question of how diverse cultural worlds might become partners in a sustainable European Union. Three plenary partners’ workshops were held in Dublin (November 1993), in Lund (June 1994) and in Dublin (November 1994). The partners’ research forum in Dublin addressed the challenge of cross-disciplinary communication at each of its twenty-four sessions, which included seminars with LLASS partner teams as well as diverse interests within Ireland, e.g., farmers, local residents, and leaders of voluntary movements, designers and implementors of development policies, and scientific experts whose ideas were influential in the shaping of policy.

## III. MAIN RESULTS OF THE PROJECT

*Issues to be addressed at global/scientific level*

There was general consensus, albeit not fully documented empirically, on the following observations : The primary cause of environmentally unsustainable development is a global economic system which seeks to colonise the entire Earth, without concern for its bio-physical, cultural, and social diversity. This system has been designed and defended by economic theories now historically-outmoded yet still widely-accepted among politicians, influential decision-makers in most fields, including labour unions: at a theoretical level, there is an

urgent need for some radical re-questioning from the scientific community. Focus on questions of scale and appropriateness reveal insight on hitherto unexamined costs of externalities, as well as the opportunities and risks of increasing network interconnectivity: vital components for a revised development theory.

*Issues to be addressed at trans-national scientific/policy levels :* Underlying the currently unsustainable course of developments during 1950-90 is sectoral specialisation in the production of scientific knowledge and policy expertise. Democratically-expressed values of economic growth, social vitality, and ecological integrity are each voiced in distinct modes of discourse, each suggesting a different scale at which success could be achieved. The scale imperatives dictated by conventional economic theory during 1950-90 have set criteria for minimal size of enterprise, but not for maximal thresholds of scale in the production and circulation of products short of a potentially global market. Social and ecological consequences, at the level of lived geography daily life, were regarded as merely ancillary or welfare matter. A serious approach to these problems must include a firm commitment to identify and critically assess complete "paths" of production-consumption - recycling or dumping of products across national or administrative borders. New frameworks are needed for the analysis and assessment of trans-boundary chain processes.

*Issues to be discussed at EU/national/and local scales :* At the managerial level, there are enduring tensions between territorial and functional domains of discretionary reach. There is a fundamental contradiction between two strongly espoused principles in EU policy: the principles of subsidiarity on the one hand, and that of market-based maximum economic growth on the other. The inherited political geography of governmental discretion comprises a mosaic of territorially-circumscribed domains within which democratic participation and subsidiarity principles could be exercised, while the actual economic geography of enterprise involves mechanisms of network connectivity which transcend territorial boundaries and increasingly are set by global conditions.

Postwar material growth, facilitated by applied science and cheap energy, has led to a distantiation of relations. On one hand there is a vastly increased volume of new scientific information, delivered in highly specialised form by separate and often conflicting channels; on the other hand, the free market economy demands interaction and interdependency with often unknown and distant places without the ability to assess impacts on life styles and consumption patterns in remote areas.

LLASS region-specific studies provide empirical evidence on the eventual scale implications of developments during 1950-90, highlighting (a) tensions between internal and external influences on landscape and life over time of sector-specific policy- and market-driven forces; (b) area-based regional responses; and (c) ideas about alternative development strategies, e.g., in the field of energy, "least cost planning, and "demand-side management", and in the field of agriculture, diversified farming and regionally-based commerce.

**Empirically-based results include the following:**

1. Landscapes, understood literally as visible artefactual surfaces, have shown little tangible change in some case study sites. In one case (Flevoland, in the Netherlands), an artificially-constructed landscape afforded a *tabula rasa* for the unfolding of planning objectives: initially oriented toward rationalisation of land uses for purposes of maximum productivity, and later for "rustification" as a magnet for suburban occupance. In Saarland, new patterns of living have inserted themselves within traditional landscape forms. In Skåne, where agrarian landscapes had been largely rationalised in 1950, there are efforts to conserve traditional forms and "sites of ecological value", whereas in Tipperary the relative stability of landscape form can be traced to cultural attachment to land and the resilience of kinship structure. Processes underlying this relative stability in landscape physiognomy include welfare payments and support mechanisms; sustitution of new area-based activities for traditional primary activities; urban to rural migration of people seeking alternative ways of life; and new ventures of capital in tourism development demanding heritage conservation and even "frozen" landscapes.

2. Countering such stability, however, there have been several disruptive processes leading, in some cases, to visible landscape changes. These include:

- widening scales of technology- and market-driven processes in the production, consumption, and distribution of food, energy, and information;
- increased mobility of capital and higher levels of network-connectivity in the functional organisation of space
- ever-extending spatial scales within which the environmental consequences of sectorally-based *genres de vie* impact on local and distant regions;
- spatial inequalities within and among regions with respect to discretion over livelihood, social space, and

decision-making on environments and resources;

- production of such inequalities through the spatial transfer of negative externalities by non area-based, and non-sustainable *genres de vie*;
- serious ecological consequences of road-building, drainage and manipulation of water courses, enlargement of fields and removal of hedgerows, unrestricted fertiliser use and intensificationof agriculture
- reduction of aesthetic diversity and threats to the ecological integrity of rural landscapes
- popular reactions against the environmental indifference which characterised drives toward productive efficiency during the postwar period.

3. A roughly three-phase trend, each one emphasising different "scales" for development, is discernible among the study sites. First, an "economic" phase when postwar reconstruction and modernisation schemes, backed by grant aid, capital investment, and mechanisation led to an overall rise in standards of living. The ever-increasing thresholds of scale required for economic growth precipitated a sharp decline in the number and variety of area-based *genres de vie*. Skåne and Amsterdam were already at this point in 1950. By the late 1960s, ecological concerns were articulated, particularly in Saarland and Sweden, and after the 1973 oil crisis, a second "ecological" phase witnessed arguments for small scale. Previous policies and practices were altered to accomodate both energy-saving and environmental concerns. The third phase, from the mid-eighties on, could be described as the "sustainability" era, where development is seen to involve not only economic and ecological issues, but social ones as well.

4. The pace and magnitude of these scale transformations have varied among the four regions, and differences in response, as well as in attitudes toward sustainable development reflect:

- geographical location, resource endowment, and phase in postwar regional development
- national context, economic base, political history and power relations
- administrative capacity, planning doctrines, and policy experience
- social values and culturally-varying attitudes toward nature and place
- levels of education and school programme/academic discipline
- proximity to urban/metropolitan centres.

5. Viewed from the "actor's frame of reference", the challenge of environmentally sustainable development may be elucidated in terms of tensions between area-based and sector-based *genres de vie,* and the interaction between stabilising and innovative elements within each. Developments during 1950-90 have posed radical challenges to earlier bases of identity, order, and niche. Sustainable development, however, demands a negotiation of these within ever extended scale horizons of discretionary reach:

(a) perceptual reach [Identity]: Perceptions of space and influence vary among individuals and social reference worlds. Identity with place and attitudes towards the environment vary greatly across cultures. While land may be regarded by many Dutch farmers as a mere commodity or factor of production, it retains strong emotional and symbolic meaning for most Irish farmers. In Skåne attitudes vary from the sense of stewardship of inherited property to the exploitation for maximum productivity. Identity and perceptual reach also vary markedly between sector- and area-based *genres de vie*. For actors within large-scale enterprise, e.g., in Germany, identity and knowledge range were far more closely associated with institutional role and status. Decision-makers on transnational energy production were completely unaware of the direct consequences of their decisions on native populations in remote regions. Among diversified farmers who had followed initial EU and national directives for higher productivity and market orientation, there were serious difficulties later in adapting to policies which emphasised "environmental" considerations. Those who had pioneered environmental friendly farming, in fact, received little support and found themselves actually penalised both in market and policy terms. Today one of the most perplexing aspects of perceptual reach for Dutch and Swedish farmers is the increasing volume of information, laws and regulations, which lead to the sense of no longer being in charge of their enterprises. Ironically in the 1990s, throughout the Amsterdam region, in Skåne, and Saarland, there is a marked quest for rurality and area-based contexts for living, at least for those with incomes from sectorally-based *genres de vie* Recent arrivals to rural areas tend to develop a stronger identity with place than some long-term residents now involved in sector-based enterprise while emigrants often retain their sense of identity with their home areas even if there is no possibility of return.

(b) functional reach [Order and Niche]: Market-driven centralisation and specialisation of production and re-distribution, particularly of food and fuel-processing, have increased the spatial reach of large-scale and

sectorally-based enterprise and have simultaneously curtailed the functional reach of area-based occupations. Trans-national networks have produced social inequalities via the spatial transfer of negative externalities to remote regions. Concomitantly, environmental movements have sought to deflect negative impacts and increase their share of positive externalities.The result of these conflicts is confusion and insecurity at ground level as ways of life are challenged. For primary occupations, Phase One witnessed the curtailment of discretion over livelihood base, e.g., land, labour, infrastructure and "inputs" to agriculture and a drastic decline in employment numbers. Rationalisation of schools, shops, markets, creameries and other services, has undermined much of the traditional infra-structure of social life in rural regions; access to such services diminished for those without access to a car . The substitution of machinery for labour has led to outmigration and higher levels of unemployment in both rural and urban settings, and the continued exodus of youth threatens social sustainability in area-based *genres de vie*. In recent years, however, in the more technologically advanced and central sites (Flevoland, Saarland, and Skåne), those who live in rural areas have access to a wider range and quality of goods and services than some urban people do. Employment opportunities for rural women have actually increased in Skåne .

(c) administrative reach [Horizon]: Democratic participation in decision-making has varied considerably among the four case-study sites, which range from former imperial/colonial societies to post-colonial ones. Such cultural legacies have stamped the existing administrative framework within which interactions between "bottom-up" and "top-down", formal and informal initiatives are currently negotiated. The waxing and waning of voluntary initiatives for community development has followed similar courses in all four study sites: a flurry of activity during the late 1950s and early 1960s; a waning during the 1970s and early '80s, and a recent flowering during the 1990s. Voluntary initiatives for community associations oriented toward sustaining social vitality within rural regions have been characteristically led by creative individuals with experience of (i) more than one "social reference world", (ii) life in another area or (iii) a strong commitment to stewardship of inherited property. In many instances, women have assumed catalytic roles and continue to do so. Vital, in most cases, has been the *potential scale* of participation, ranging from locality to nation and beyond. Organisations which began as "grass-roots" movements, exploded by networking to European and global levels; this has greatly aided particular sectors but at the cost of losing touch with people on the ground. The role of newsletters and kinship-reach has been vital in sustaining vitality in community associations, while media and informal networks have been critical in shaping negotiations over energy policy across national and regional boundaries.

6. In terms of the overall definition of sustainable development as the successful harmonisation of economic, ecological, and social values, the *genres de vie* now taken-for-granted in all four countries can scarcely be regarded as ecologically or socially sustainable.

7. Policy measures on social and environmentally-relevant issues have been most successfully implemented in regions where the problems were first perceived, e.g., post-war regional and urban planning in the Netherlands, pollution-control measures in the Ruhr and Saar region in Germany from the late 1950s, awareness of acidification and transboundary air pollutants in Sweden in the 1960s where parents were influenced by school children (illustrating the role of primary education). Policy initiatives on agrarian development from the late 1940s on were first effective in Sweden, a neutral country in World War II, where values of self-sufficiency in food and raw materials had particular significance, and also in Ireland where problems of emigration were felt. While initially showing a high level of contextual sensitivity for the region of origin, policies lose this when applied over wider geographical and cultural scales.

8. The scale modulation of environmental policy everywhere poses challenges to democracy: the complexity of issues demands representation from a variety of interest groups; decentralised mechanisms may be most appropriate for wide consultation, but without consensus at higher scales, action can be delayed . A general trend with regard to top both conflictual and consensual patterns of negotiation indicate, however:

- increased scientific, public, and corporate awareness of problem structures (from mono-dimensional to multi-dimensional, from fragmented to comprehensive approaches)
- incremental improvement of legal, administrative and corporate responses
- clear improvement of media competence in addressing environmental issues
- more successful conflict strategies by impacted groups leading to improved information, participation and mitigation procedures

9. Criteria of appropriate scale for environmental policy should therefore involve:

- sensitivity to bio-geographical setting and socio-cultural traditions;
- assessments of external costs involved in the production and distribution of products and the consequences for remote areas and recirculation in the biosphere;
- administrative capacity to accomodate initiatives from "bottom-up" and "top-down", sectoral and area-based livelihood interests;
- information and influences arriving "laterally" via existing educational and media channels, on the environmental implications of human activities and developments in technology.

## IV. SCIENTIFIC INTEREST AND POLICY RELEVANCE

### (i) Scientific Interest and Novelty

1. Conventional procedures of research enquiry into issues of sustainable development, anchored in functionally-specialised, macro-scale, generalising procedures, yield ample evidence on problems of reconciling economy and ecology. Little attention has been devoted to historical and cultural differences in social values, particularly to those which foster the sense of co-operation and co-responsibility within particular areas. In elucidating tensions between sectoral- and area-based *genres de vie* in four distinct regions, the LLASS project has elaborated an analytical framework which offers a more incisive grasp of challenges involved in sustainable development.
2. Region-specific research offers a high degree of context sensitivity. Within specific regions, much scope can be given to the mix of bio-physical, social, cultural, and administrative aspects.
3. Analyses of landscape morphology or aesthetics yield a relatively opaque description of sustainable development. Evidence on ecological changes, e.g., those consequent upon fence removal, specialised agri-production, and diminutions in bio-diversity, may be traced from aerial photographic and satellite image data, if conducted at scales which are larger than that of the lived landscape. Involvement of voices from lived experience have provided a vital complement to observations based on archival and landscape records: together, they have yielded insight into "invisible" processes of negotiation among power interests within structures, "non-rational" decisions, and enduring values in the relationships between people and environment.
4. Beyond the area-based and regionally-embedded patterns, however, analyses of trans-regional processes, of network expansion and connectivity in the socially-constructed spaces of corporate enterprise, reveal important insights into the genesis of environmental conflict .

5. Cross-cultural comparison and exchange of insight into issues of scale and discretionary reach offers a fresh approach toward more integrated understanding of the micro-social climate of relationships between people and their surroundings, from local through transnational scales.

- The historical geography of landowning and property rights offer a basis for discussions of differences in bonding to land and private/collective responsibility for social conditions and ecology and the value of ecological services to society.
- The design of administrative structures and taxation at various levels have shown differences among the study areas; these issues are of vital importance for the implementation of policy measures by interaction of top-down and bottom-up processes.
- Analyses of discretionary reach must involve more than the interactions of "bottom-up" and "top-down" interests and access to information. A vital consideration is the quality of knowledge and understanding. Educational programmes in all four countries have encouraged specialisation in knowledge and life, maximisation of individual benefit, and minimal concern about environment. "Bottom-up" approaches based on single-sector interests, however scientifically justified, can be destructive. "Top-down" actions often fail because there is too little understanding of local situations and insufficient resources for education, even at a time when vast volumes of new information need to be absorbed. Focus on networks and "lateral" processes of information and resource exchange could yield far better insight into the effective motors of decision-making and responsibility for landscape and life.

6. Processes and policies underlying the general postwar drive toward economic growth have been premised on assumptions that:

- natural resources, given technological advance, were potentially infinite;
- circulation of people and products would liberate economies and guarantee higher "quality of life" for all;
- people's potential for altering ways of dwelling within the biosphere could automatically proceed in a

direction assumed in scenarios for economic development;

- Nature itself was infinitely exploitable and adaptable.

**(ii) Policy Relevance**

1. Policies have been most successful in settings where they were (a) first articulated, (b) supported by "grass-roots" initiatives, and (c) convergent with sectoral interests. Illustrations include agricultural policy in Sweden, energy policy in Germany, housing/transportation policy in the Netherlands, and the co-operative movement in Ireland. Success in promoting sectoral (economic) developments, however, has been achieved at a serious price in terms of ecology and social vitality within area-based patterns of living. Corrective measures, again sectorally-based, have led to contradictions and confusion in many instances. Regionally integrated policy has had limited success, in the absence of adequate administrative resources for their implementation.

2. Environmental policies which have an essentially penalising approach (quotas on production and taxation of pollution), have not achieved desired effects. Alternative approaches, emphasising more adequate costings of externalities, and involving incentives for repairing environmental damage, make more sense from the vantage point of sustainable development.

3. Decentralised strategies of policy-making to lower level authorities are more effective than the formulation of general guidelines. These enable a wider scope for region-specific solutions, with an open eye for a number of options for resolving tensions among various land-use claims within a particular area. Policies formulated within the framework of one particular region, and successfully implemented there, may not be appropriate for general application throughout Europe.

4. Contextually-sensitive environmental policy should be formulated at scales which reflect (a) historical traditions, resource endowments and levels of "development"; (b) levels of complexity in cultural and semi-natural systems; and (c) administrative capacities for harmonising sectoral and area-based interests, "bottom-up" and "top-down" initiatives, formal and informal processes.

5. Resources (capital and time) should be allocated to environmental education and training at every level of society: school children, adults, managers, and even specialised researchers. Area-based study circles, linked to initiatives in local development, could play a vital role in the discernment of appropriateness and scale for sustainable development. Without simultaneous openness on the part of regulatory authorities, however, such initiatives may not be sustainable.