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# **Building a New World: An Ecosystemic Approach for Global Change Development Design**

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# Building a New World: An Ecosystemic Approach for Global Change & Development Design

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Problems of difficult settlement or solution in the world cannot be solved by segmented academic formats, market-place interests or mass-media headlines; instead of dealing with taken for granted issues (the apparent “bubbles” in the surface), public policies, research and teaching programmes should detect the issues and deal with them deep inside the boiling pot. Policy discussions and policy making require new paradigms of growth, power, wealth, work and freedom embedded into the cultural, social, political and economical institutions (more critical than individual motives and morals). Urban planning cannot be subordinated to the interests of business corporations, cities cannot remain as privileged centers for profit and capital accumulation, transforming citizens in mere users and consumers, but must preserve and develop mankind heritage, encompassing history, values, architecture, landscapes, the arts, the letters. Being-in-the-world is more than living on it, it demands an ecosystemic approach, the construction of a new social fabric, as new structures emerge in the socio-cultural learning niches and develop critical capacities to operate changes in the system. Problem solving implies dynamic and complex configurations intertwining four dimensions of being-in-the-world, as they combine, as donors and recipients, to induce the events (deficits and assets), cope with consequences (desired or undesired) and contribute for change (diagnosis and prognosis): intimate (subject's cognitive and affective processes), interactive (groups' mutual support and values), social (political, economical and cultural systems) and biophysical (biological endowment, natural and man-made environments). An integrated ecosystemic approach to education, culture, environment, health, politics, economics and quality of life should develop the connections and seal the ruptures between the different dimensions of being-in-the-world, in view of their mutual support and dynamic equilibrium.

Keywords: culture, politics, economics, environment, ecosystems, education

Contemporary problems are closely interconnected and interdependent, they cannot be understood and solved within the present context of weakening social bonds and cultural, political and economical disarray, usually a generous ground for market-place's interests, publicity-oriented behaviour, fragmented academic disciplines and misguided government policies (Elohim, 2000).

The present ecological crisis reflects a prior disordering of thought, perceptions and values (Orr, 1994), and is a sign of the severe cultural crisis of our times, which break through the core of societal institutions – education, justice, governance – already impaired by the maneuvers and collusions of political and economical dominant groups, by the stronghold of national and international corporate interests.

Deforestation, desertification, global warming, biodiversity losses and other extreme events are linked to powerful economical and political interests, which try to legitimise business expansion in terms of “development” models based on consumerism and abuse of natural resources, notwithstanding its failure to face the increasing inequalities, violence and poor quality of life throughout the world.

Development strategies linked to mega-projects ignore fundamental human needs; environmental impact studies should not be treated as a mere formality, but promote the principle of “right relationship”, which respects the integrity, resilience, and beauty of human and natural environments as the foundation for a new economic order (Brown and Garver, 2009).

In “asymmetrical societies” (Coleman, 1985), large differences in power between natural persons and legal persons (individuals and enterprises), permit business corporations to have a substantial influence on public policies and State affairs, as they diffuse responsibility along hierarchical structures and safeguard their shareholders as mere investors in the financial markets.

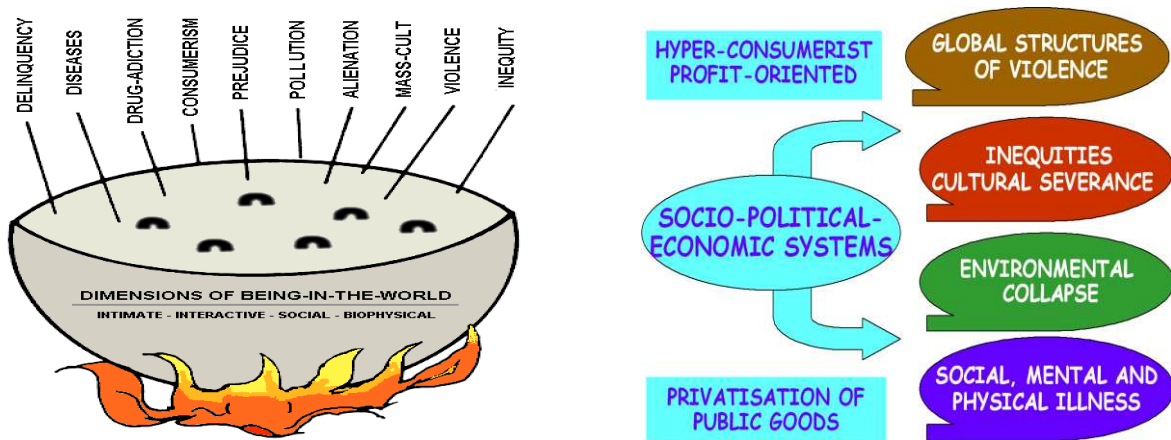


Fig. 1 The real problems lay deep inside the boiling pot, not in the superficial bubbles.

Fig. 2 Current socio-political-economical systems are detrimental to the quality of life.

The dominant approach to the environment favoured by corporate, state and international authorities, shows that present conditions are contingent outcomes of the undesirable impacts of overall policies and market conditions (Robbins, 2004); multi-actor, multi-level and multi-sector structures interfere with state steering and governmental practices throughout the world.

Privatisation and deregulation reduce the role of government, especially at the national level, and hence weaken its mandatory powers over environmental standards; the current “global corporate economy subordinate environmental standards to what are presented as “requisites” for “free” global trade and proprietary “rights” by the World Trade Organization (Sassen, 2010).

Changing the current “world-system” is mandatory; “it has boundaries, structures, member groups, rules of legitimation, and coherence; it is made up of the conflicting forces which hold it together by tension and tear it apart as each group seeks to remold it to its advantage; it has a life-span over which its characteristics change in some respects and remain stable in others” (Wallerstein, 1974: pp. 347-57).

A “new global covenant” should be carefully planned (Held, 2004), emphasizing social justice, physical, social and mental wellbeing and the equilibrium between natural and built environments. The conceptual direction and the legitimacy of development strategies should be based on a comprehensive framework, instead of surrendering to specialisation and fragmentation.

The environmental crisis “stems from the prevailing power-driven ethos, the anomic individualism, which divert human concern into technological invention, scientific advancement, and unlimited material consumption and production” (Orhan, 2003). The focus should not be on the “bubbles” of the surface, (consequences), but on the configurations deep inside the boiling pot (figs 1, 2).

These bubbles have dynamic properties, “they co-exist among many others in a cluster, as the collection of all factors affecting health, environment, working conditions, economy, education, culture, etc.; each bubble is influenced directly by a companion bubble's interface but also indirectly through the companion bubble's connections to other surfaces” (Wilcox 2007).

In many problem-ridden, economically unequal and intrinsically violent cities of the emerging countries, most people become uninvolved in civic life due to the outspread criminality (Baiocchi, 2005): while some enjoy life in fortified enclaves most of the city dwellers live in makeshift slum housing, without the basic social services (health, education, police authority, etc.)<sup>1</sup>.

This goes along with turmoil, uncertainty, lack of confidence, fear and impotence (Rotmans and Loorbach, 2009). "The more the city concentrates the necessities of life the more unlivable it becomes; the notion that happiness is possible in a city, that life there is more intense, pleasure is enhanced, and leisure time more abundant is only mystification and myth" (Lefebvre, 2003).

Ecologically sustainable behavior is linked to positive social involvement: in contrast to "extrinsic" goals, like money, image and status (which are means to other disputed ends), "intrinsic" goals are inherently gratifying to pursue, like self-acceptance (growing as a person), affiliation (having close, intimate relationships), community feeling (helping the world be a better place) (Kasser & Ryan, 1996).

Within one generation, the gap due to the lost of value systems (specially religion and ideology) has been filled by the prevalent ideology of the market; in the lack of an alternative value system, most of the religious sects in the urban areas reinforce the idea that political and economical success, in the current system, is a sign of divine blessing towards the chosen ones.

Teaching ethics do not thrive in highly corrupt societies. Beyond profit-searching motives of business corporations and other vested interests, transboundary issues like human rights, pollution, deforestation, drugs and criminality impose a significant reconfiguration of state control and political authority, in which power must be shared on ethical grounds in a transnational basis, by transnational organisations.

The role of law, the work of attorneys and judicial courts is frequently hampered by the very system in which they have their insertion, "legal" and "illegal" strategies are mixed together in the assemblage of current political and economical interests; powerful lobbies, deeply ingrained in the public administration, favour mega-projects with intensive use of resources, rather than the appropriate technologies.

To cope with environmental collapse, environmental justice should be extended beyond national boundaries, beyond political and economical interests of malicious consortia and corrupted or lenient governments, which easily comply to ill-intentioned propaganda and lobbying by influential groups and questionable business organisations, always willing to control public affairs for the sake of their private interests<sup>2</sup>.

Territorial and jurisdictional aspects are fundamental in terms of governance (Ashley, and Crowther, 2012); political and cultural forces blunt our response to the growing complexity of our ecological catastrophe (Buell, 2003); present ecological problems cannot be

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<sup>1</sup> "Nothing more visibly reveals the overall decay of the modern city than the ubiquitous filth and garbage in its streets, the noise and massive congestion that fills its thoroughfares, the apathy of its population toward civic issues and the ghastly indifference of the individual toward the physical violence" (Bookchin, 1979).

<sup>2</sup> "Environmental culture boldly unmask the institutional and systemic violence of our culture and reveals how our culture's life-destroying practices and ethical and spiritual bankruptcy are closely linked to our failure to situate ourselves as ecological beings" (Plumwood, 2002).

understood or resolved without dealing with deep-seated problems within society and its structurally amoral political-economical system (Bookchin, 1982).

Legal procedures will not forestall neither the *planned obsolescence* of products designed for the dump nor the *perceived obsolescence* fostered by propaganda induced consumerism, which, among other psychosocial strategies, arise in people the sensation that products should always be substituted by new ones, buying and disposal converted into rituals of a culture that makes consumption a way of life.

The focus should not be on the consumer's behaviour, but on its social and cultural embeddedness, on its interdependencies with the economic and political frameworks, on the pervasive impact of mass-media, marketing and advertising in the formation of public opinion about products, services and prevailing lifestyles, on the cultural crisis that breaks through the core of all societal institutions.

The emphasis on human rights, rather than collective political action, only reiterates individualistic approaches (Harvey, 2005). The fundamental change is economic, social, cultural and political; priority should not be given to growth, but to sustainability, human development, order and stability in civil society: if one group gets richer, others can be used and discarded and will not share in the wealth (Bown, 2007).

"Social inclusion" only accommodates people to the prevailing order and do not prepare them to change the system (Labonte, 2004); once "included", a new wave of egocentric producers and consumers reproduce the system responsible for their former exclusion, increasing the abuse of nature in the name of the so-called "progress" and irresponsible consumerism.

Growth, power, wealth, work and freedom must acquire new meanings (O' Sullivan, 1987). The accumulation of wealth to the exclusion of other components of the development process (safety, health, education, equity, ethics, justice, beauty) has led to overwhelming natural devastation and severe social and cultural impacts, with high levels of crime and violence.

Privatisations, deregulations, sweeping market-oriented reforms, resulted in relinquishing state's control to the huge power of private sectors; in this context, new technological waves will not rescue a devastated environment, nor relieve the effects of inequities, uprootings, displacements, hunger, violence, ecological insults and deep social division in contemporary society (American Anthropological Association, 2005).

Cultural and educational policies succumb to the prevailing political and economical interests, converting the population into consuming subjects, appropriating their thoughts and bodies and transforming them into the property (commodities) of influential people and questionable business corporations, which use propaganda, lobbying and corruption to intensify profits and secure their hegemony over public affairs.

Advances in applied ethics should be made "by thoughtful and innovative thinkers in any activity area; specialists of several professions who work together, within a multidisciplinary approach, must base their action on some common principles of ethics and on an understanding of each others' obligations, responsibilities and professional standards" (Soskolne, 1997).

When the political, economical, cultural and ethical disarray normalises and condones inequities, transgressions, violence and atrocious behaviours, the "philosophical" questions of ethical, moral and overall civic education are frequently left aside, information and communication technologies being presented as a panacea, not as a resource or an instrument.

Technological “solutions” often ignore the social, cultural and environmental impacts, development proposals, which reinforce the current reckless way of life, repeatedly demand even more resources and increase pollution and waste, without changing the irrational system of production, transport and consumption that plagues the globalised world<sup>3</sup>.

If pressures on systems steadily increase, “catastrophic bifurcation” can appear without obvious early warning signals, and the resulting changes are always difficult to reverse; understanding how such transitions come about in complex systems such as human societies, ecosystems and the climate is a major challenge (Scheffer et al., 2001).

“Sustainability” based on capital and technology, cannot be a substitute for the wealth of resources drawn from the natural world: “strong sustainability” entails containing population growth and curbing consumption, meeting the needs of the current generation as opposed to their demands and living within the productive capacity of nature (Layzer, 2008).

No prior age could have conceived development as plunder (White, 1999; Trainer, 2000), implying systemic risks (Giddens, 2001), global catastrophic risks (Bostrom, 1997), simultaneous crisis formation (Harvey, 2006), global and integral accidents (Virilio and Turner, 2005), total risk of catastrophe (Ewald, 1997), general disaster (Massumi, 2003), the worst imaginable accidents (Beck, 2007).

Preparing people to assume their positions in society, both as professionals and citizens, cannot be reduced to ritualistic actions, such as voting or paying taxes, nor can it encourage an uncritical ideological allegiance to the “free-market”, transforming schools in training centers for compliant egocentric producers and consumers, instead of centers of critical inquiry and institutional change.

Development must be based “on the satisfaction of fundamental human needs, on growing self-reliance, on the construction of organic articulations of people with nature and technology, of global processes with local activity, of the personal with the social, of planning with autonomy, and of civil society with the state” (Max-Neef, 1991). A proper cultural environment, a common ethical ground, is more important than the best legal prescription.

“Transboundary and global environmental harm present substantial challenges to state-centered (territorial) modalities of accountability and responsibility; the globalization of environmental degradation has triggered regulatory responses at various jurisdictional scales to address the so-called “accountability deficits” in global environmental politics” (Mason, 2008).

Institutional change is “a great transformation from predominantly relationship-based regulation systems to impersonal institutions and formal rules, creating trust at systemic (versus idiosyncratic) levels and allowing huge reductions in individual marginal transactions costs; institutions for risk-sharing at a systemic level decrease individual risk and allow longer time horizons” (Meisel, 2004).

Institutions provide the rules of the game in society, the humanly devised constraints that shape human interaction (North 1990); they stabilize the behavior and interaction of

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<sup>3</sup> “Promoters of multi-billion dollar development megaprojects systematically misinform parliaments, the public and the media in order to get them approved and built; they often avoid and violate established practices of good governance, transparency and participation in political and administrative decision making” (Flyvbjerg, B., Bruzelius, N. and Rothengatter, W., 2003).

agents, create predictability and decide how authority is constituted, exercised, controlled, and redistributed (March and Olsen, 1989).

“Weak public institutions and deeply entrenched networks act together to prevent accountability, funneling finance and influence along unofficial channels for the benefit of corrupt groups; political people participate in governmental processes primarily to secure and retain access to personal enrichment at the expense of the public good” (Whitton, 2009).

Whole system change depends on developing a sufficient critical, collective and connective intelligence of systematic and systemic aspects of organisational change: “there is always a tendency for significant challenges (such as education for sustainability) to be understood and accommodated within the norms of the existing system - rather than change the system to be congruent with the challenge” (Sterling, 2009).

It is generally accepted that cross-cutting programmes on sustainable development imply a worldwide change of focus and procedures in different areas of production, distribution, consumption and discard, reducing consumption, reusing products, and recycling materials. This is not only a matter of education, but of governance and societal organisation<sup>4</sup>.

### **The Ecosystemic Approach to Education, Culture and Quality of Life**

The present United Nations decade for education for sustainable development emphasizes critical thinking and problem solving, interdisciplinary and holistic multi-method, values-driven approaches, encompassing environmental principles, social awareness, ethical dimensions, economic prudence, confidence and participatory decision-making (Lindberg, 2005).

“Education as a whole, and environmental and sustainability education in particular, are limited in their ability to make a positive difference to assure a more sustainable future” (Sterling, 2003). “Whilst environmental education in schools help to normalise environmental values, children will take cues for appropriate behaviour from the media, peer group and society as a whole” (Bedford, 2002).

“Education and the media have only succeeded in fostering a culture characterized by narrow vested interests, intolerance and violence. To build a sustainable society we need to fundamentally redesign many of our technologies and social institutions so as to bridge the wide gap between human design and the ecologically sustainable systems of nature” (UNESCO-EOLSS, 2008).

What are the prospects of education as a whole, and environmental and sustainability education in particular, regarding the severe threats faced by today’s world? Identifying complex configurations that predict particular outcomes asks for an analysis of assumptions, contentions, consensus and conflicts, which are essential to the definition of the problems and to build new paradigms to live better in a better world.

Teaching for meaning in a cultural context that values only information transmission is one of the main challenges for education in our times (Boostrom, 1997): “in order to salvage the realm of character and moral development, the present ethos should not center on

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<sup>4</sup> “Private consumption at the cost of amenity and future is by no means a necessity of nature as consumption is to a large extent a cultural activity”; it is linked to the emergence of the knowledge economy, “with returns increasingly being in the form of profits instead of wages” (Huppel, 2008).

individual good and individual value alone, but on the environment and the public space, as a global system”.

Table I  
Dimensions' equilibrium in the ecosystemic model of culture

	<i>Donors</i>			
<i>Recipients</i>	INTIMATE	INTERACTIVE	SOCIAL	BIOPHYSICAL
INTIMATE	Creativity	Support	Services:	Vitality
INTERACTIVE	Altruism	Teamwork	Alliances	Niches
SOCIAL	Citizenship	Partnerships	Organisation	Spaces
BIOPHYSICAL	Care	Defence	Sustainability	Equilibrium

Table II  
Dimensions' disruption in the non-ecosystemic model of culture

	<i>Inflictors</i>			
<i>Victims</i>	INTIMATE	INTERACTIVE	SOCIAL	BIOPHYSICAL
INTIMATE	Solipsism	Subjection	Neglect	Harm
INTERACTIVE	Egotism	Fanaticism	Co-opting	Dispersal
SOCIAL	Abuse	Corporatism	Tyranny	Extinction
BIOPHYSICAL	Injury	Damage	Spoilation	Savageness

Table III  
Intertwining the four dimensions of the world in the diagnosis and treatment of the problems

Stages of Process	INTIMATE	INTERACTIVE	SOCIAL	BIOPHYSICAL
Diagnosing the Events	Subject's Cognitive and Affective Status Existential Control	Dynamics of Primary Groups Communities' Organisation	Cultural Aspects Social Structure Public Policies Services	State of the Natural and Built Environments Beings and Things
Eliciting Favourable Changes	Subjects' Cultural, Emotional and Educational Development	Improving Relationships Social Networks Community Building	Public Policies Law Enactment Social Control Civic Action	Quality of Natural and Man-Made Environments Beings and Things
Evaluating the Process of Change	Well-Being Awareness Resilience Creativity	Proactive Groups Community Solidarity Cohesion	Social Movements Well-Fare Policies Social Trust Citizenship	Equilibrium of Natural and Man-Made Environments

Education cannot be thought apart, it does not prosper in a context of social fragmentation and weakening social bonds: creation of choices, generation of capacities, development of motivations depend on cultural, social, political and economical aspects; the quality of institutions and incentive structures are more critical than the quality of individual motives and morals (Krol, 2005).

As an essential condition to “moral and democratic education” (Lind, 2003) and “more problematic than the need for a radically different economy, is the acceptance of some values which clash with the Western tradition, notably the present commitments to competition, individualism and acquisitiveness, and the conception of progress” (Trainer, 2001).

The equilibrium (table I) or disruption (table II) between the different dimensions are linked to opposite models of culture (ecosystemic or non-ecosystemic); the process of change encompasses a synchronized work with the four dimensions (table III; fig. 3). All dimensions of being-in-the-world should be considered altogether in view of an integrated approach to public policies and research and teaching programmes.

Creation of choices, generation of capacities, development of motivations depend on complex configurations formed by four dimensions of being-in-the-world (intimate, interactive, social and biophysical), as they combine to induce the events (deficits/assets),



cope with consequences (desired/undesired) and contribute for change (Pilon, 2009; 2010).

	INTIMATE	INTERACTIVE	SOCIAL	BIOPHYSICAL
DIAGNOSIS OF THE EVENTS	SUBJECTS' COGNITIVE AND AFFECTIVE ACTUAL STATUS	GROUPS 'AND COMMUNITIES' DYNAMICS AND COHESION	PUBLIC POLICIES LAW ENACTMENT CITIZENSHIP PARTICIPATION	NATURAL AND MAN-MADE ENVIRONMENTS BEINGS, THINGS
ELICITING NEW EVENTS	DEVELOPMENT OF SUBJECTS' EXISTENTIAL SELF-CONTROL	DEVELOPMENT OF GROUPS AND PRO-ACTIVE COMMUNITIES	DEVELOPMENT OF PUBLIC POLICIES AND CITIZENSHIP	PROMOTION OF NATURAL AND MAN-MADE ENVIRONMENTS
IMPACT ON EACH DIMENSION	ENHANCEMENT OF SUBJECTS' WELL-BEING	ENHANCEMENT OF GROUPS AND COMMUNITIES	ENHANCEMENT OF POLICIES AND CITIZENSHIP	ENHANCEMENT OF OVERALL ENVIRONMENT

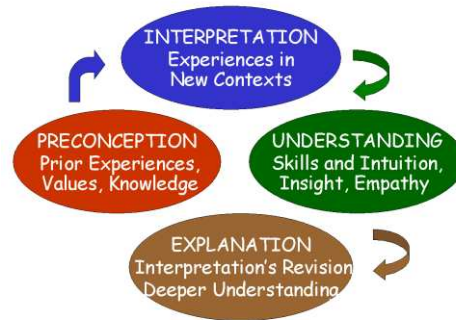


Fig. 3 The process of change encompasses a synchronized work with the four dimensions.

Fig. 4 From preconception to explanation: heuristic-hermeneutics in the socio-cultural learning niches.

“Being-in-the-world” takes precedence over merely living in the world, it encompasses the four modes of existence (Binswanger, 1963): man’s relationship with himself (*Eigenwelt*); man’s relationship with his fellow beings (*Mitwelt*); man’s relationship with overall society (*Menschenwelt*); man’s relationship with his environment (*Umwelt*).

Man’s relationship with his fellow beings encompass the concepts of group and grid: the former refers to the clarity of the boundaries around a group to which people belong; the latter to the strength of the rules which govern how people relate to one another: hierarchical societies with strong ties score highly on group and grid; individualist or market-driven ones are weak on both (Douglas, 1996).

To create awareness and capabilities beyond the traditional schemes of thought, feeling and action, subjective and objective realities should be entangled, creating an “excess of meaning” (Gadamer, 1977), encompassing the alien that we strive to understand and the familiar that we take for granted, a process encompassing socialisation, externalisation, combination and internalisation (Nonaka and Konno, 1998).

The work with the socio-cultural learning niches develop a capacity to ask wider questions, reframing the problems in new ways (fig. 4), rather than being trapped into the path-dependency of pre-established problem-definitions<sup>5</sup>. The objective is not to solve taken for granted problems, but to unveil and work with the dynamic and complex configurations encompassing individuals, groups, society and environments.

“A niche is a new structure, a small core of agents that emerges within the system and is seen as the incumbent for innovation. Emergent structures around niches stimulate the further development of these niches and the emergence of niche-regimes” (Frantzeskaki and Loorbach, 2009). In order to have a congruent understanding of things, a population must occupy a “semiotic niche” and be embedded in the same “semiosphere” (Kull 1998).

The development and evaluation of teaching programmes, research projects and public policies should contribute for the transition from a non-ecosystemic to an ecosystemic

<sup>5</sup> Understanding something implies the relationships between many things, its interdependence and interaction; problems should be defined in view of the patterns unveiled by the ensemble of all relationships. causality is a process, with effect feeding back to influence the causes and the causes affecting each other; instead of straight-line thinking, “loop thinking” (Richmond, 2000).

model of culture; in this sense the configurations formed by the ensemble of these four dimensions should be taken into account (a framework for this purpose is applied for diagnosis and prognosis of present and future events).

The methodology is participatory, experiential and reflexive; heuristic-hermeneutic processes reveal reality in a specific space-time horizon of understanding, feeling and action, unveiling subject-object perceptions and contentions (*intimate dimension*), sharing them with the participants (*interactive dimension*) and setting the ground for new paradigms for being-in-the-world (*social and biophysical dimensions*).

As complex and dynamic systems that people use to interact with the world, to reason and make decisions, these “mental models” are personal, internal representations of external reality, which provide the mechanism through which new information is filtered and stored and individual behaviours consolidated (Jones, 2011).

In the socio-cultural learning niches, the project of life, both individually and collectively, can be unveiled by intermediary objects, like cardboard boxes with situations from daily life, or a curious collection of objects, which are presented to the participants to initiate the heuristic-hermeneutic process, a necessary condition to develop awareness, interpretation and understanding<sup>6</sup>.

In order to have a congruent understanding of things, a population must occupy a “semiotic niche” and be embedded in the same “semiosphere” (Kull 1998). “A niche is a new structure, a small core of agents that emerges within the system and is seen as the incumbent for innovation. Emergent structures around niches stimulate the further development of these niches and the emergence of niche-regimes” (Frantzeskaki and Loorbach, 2009).

Cultural, educational, social, economical, environmental and health problems cannot be sorted out by segmented projects; without considering micro, meso and macro relationships. Like bubbles in the surface of a boiling pot, segmented problems are symptomatic of the assemblage of political, economical, social and cultural variables that should be dealt with altogether.

Cultures define the knowledge of the past and the expectations for the future: “they shape individual and collective identities, affect the impact of innovations and social change,

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<sup>6</sup> In the socio-cultural learning niches, new ways for being-in-the-world are elicited by heuristic-hermeneutic processes, as subsequently described: 1) *Intimate Dimension*: subject-object relationships are unveiled by intermediary images or objects selected to catch the eye (like bottle caps linked by a string, strange pebbles etc.), passed along between the participants, who write down their perceptions in a piece of paper (not identified); 2) *Interactive Dimension*: cognitive, affective and conative horizons are expanded, statements, distributed out of sort, are read aloud by the participants, individual initial perceptions are shared, acknowledged and enriched by the different subject-object relationships and contents; 3) *Social and Biophysical Dimensions*: cultural, economic, political and environmental conditions are analysed and experienced as a product of the four dimensions, in view of non-ecosystemic and ecosystemic forms of being-in-the-world. The statements of the participants are considered both from a *thematic* and an *epistemic* point of view: the *thematic* analysis refers to “what”, to the emphasis and inclusiveness of the different dimensions individuals associate to the experience (contents); the *epistemic* analysis refers to “how”, to the structure of thought of the individuals and how they integrate these dimensions (subject-object relationships): 1) *Appropriation*: construction of new paradigms and forms of being-in-the-world, alteration of cognitive, affective and conative horizons. 2) *Common-sense*: conformity to established, stereotyped, commonplace, pedestrian way of seeing things, without further questioning. 3) *Scholarlike*: reduction to logical categories and frozen schemes to achieve closure, classifying and describing properties in terms of academic paradigms. 4) *Dependency*: reliance on exterior authority to qualify own experience; alienation, bewilderment, confusion, inconsistency. 5) *Resistance*: opposition to being involved, failure to see any meaning in the experience. 6) *Dogmatism*: adherence to fixed paradigms and habitual ways of being-in-the-world.

construct the social meanings of technologies, create new boundaries, new forms of social exclusion and marginality, frame our experience of space and place in everyday life, as well as individual and collective identities” (Sociology of Culture Conference, 2010).

“Trans-disciplinarity does not only combine views or merge ideas. The trans-disciplinary discussion allows questioning the “givens.” It forces one towards “detachment” from ones’ familiar discipline, culture, and belief. Detachment it is not a denial of your initial identity nor complete attachment to the alternative; it is a new awareness, a distance from the world that comes before any type of analysis you may wish to undertake” (Takashi, 2010).

In line with Ackoff (2010), “analysis only explains how the pieces of a system work, but synthesis is essential to understand a system and the interactions between its parts: the appropriate end of a social system is development, not growth; arguing about values is useless, but realizing the significant role values play in judgments lead to more constructive discussions and decision-making”.

Although collective practices, according to evolutionary theories of change, may be selected by the social environment rather than by individual dispositions, cultural evolution is also linked to the role played by human intervention, which entails intelligence, purpose, calculation, planning, learning, arguing, persuading, discussion, and argument (Nelson, 2005).

Beyond environmental education, development education needs the construction of a “new story for mankind”, enhancing local and global citizenship, human rights and justice, supporting people to understand and transform the social, cultural, political and economic structures affecting life at personal, community, national and international levels (Irish Aid, 2007).

It includes education for citizenship, which cannot be reduced to formal or ritualistic actions, such as voting or paying taxes, nor can it encourage an uncritical ideological allegiance to the “free-market”, transforming schooling in training centers for a compliant work force, which takes for granted the perverse life style of “egocentric producers and consumers” (Chermayeff and Tzonis, 1971).

“The industrial culture divides the person into parts and the world into fragments, but the environment is one whole, it is not cut up into specialties, disciplines and departments” (Drengson, 1995). Problems require “boundary-crossing skills, abilities to change perspective, to cope with complexity and to synthesize knowledge of different disciplines or areas of expertise in a critical and creative way” (Fortuin et al., 2008).

“Environmental awareness is not simply awareness of the natural environment but also of social, economic, cultural and other dimensions; it requires ‘dynamic’ skills to discover and study the environment and find solutions, capacity to discern the relevant dimensions of a situation, readiness to accept responsibility, initiative taking, independence, commitment” (Hugonnier, 2008).

It means reorganizing to produce more of the things that people need — like food, shelter, clothing, education, security, health care — and less of the costly things they do not — like military hardware, pollution, traffic jams, useless chattels and crime. Failures in governance at many levels, and the resulting suspicion and mistrust, clearly also play a role in the current state of affairs<sup>7</sup>.

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<sup>7</sup> According to the Sustainability Transitions Research Network (2010), green innovations and new practices tend to face an uphill battle, which is played out on economic, technical, political, scientific, and cultural dimensions: “the core problem regarding sustainability transitions is how green innovations and sustainable

“Education for sustainability” includes international development, economic development, cultural diversity, social and environmental equity, human health and wellbeing. In order to deal with sustainable development in both environmental and cultural terms we need a theory of cultural sustainability, since the concept of sustainability implies a holistic approach to modelling economic, biological and cultural processes (Throsby, 2008).

People with different values draw different inferences from the same evidence (Kahan et al., 2012); development, and utilization of concepts, tools and practices must take into account the collective forms of being-in-the-world; citizen-consumer's potential to alter natural consuming habits, to 'shop ethically, 'care for the environment' and 'think globally' depends on social motivation rather than rational choice (Klintman, 2012).

The emphasis on rational decision-making based on "facts" is no longer defensible; emotions, values and ethics plays a much stronger role than mere information (Etzioni, 2003; Dietz, 2011). Environmental education requires a knowledgeable and congruent teaching and learning theoretical ground, a core element for comprehension, preparedness and action, abilities to participate in, influence, share and control the learning process (Tilbury et al., 2005).

Beyond the objectivistic description of facts or dissemination of information to the public, acceptance of ethical norms, peace building, environmental equilibrium requires a whole host of ethically interpreted and ordered social experiences, a capacity to develop morally relevant interests as the bases of rights-bearing, a broad, universally rationalised cultural knowledge, an empathy with other people, including those regarded as alien, or even hostile (Znaniecki, 1935).

Media “popularizers” should draw attention to the “issues on environmentalism and culture as significant and important in symbolic and visual terms, emphasising different incentives for taking positive action, and getting institutional support to ensure both legitimacy and continuity in the process” (Hannigan, 1995). Well-being is not simply an individual attribute, but a profoundly social relational phenomena.

University teaching is vital in maintaining a social conscience based on self-awareness and self-transformation, for preparing people to assume key positions in society, both as professionals and citizens; the discussion of current problems should transcend traditional disciplines and national boundaries, in the light of global perspectives, international cooperation, transdisciplinary research and teaching programmes.

Despite the number of institutions addressing issues of environmental degradation and sustainable development, environmental problems have been exacerbated rather than solved: «this is mainly due to the fact that international environmental governance lacks co-ordination and is at odds with other areas of global governance, notably economic and development governance» (United Nations University, 2010).

A process of change must be associated with the development of an ecosystemic model of culture, leading to public action to transform current development policies and structures that wipe out biodiversity, destroy natural and built environments, abuse landscapes and resources, demolish living-spaces and generate unmanageable refuses that menace the future of life on Earth.

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practices (in behaviour and policy) struggle against existing systems or regimes; incumbent systems in transport, energy, and agri-food domains are difficult to dislodge because they are stabilized by various lock-in mechanisms that lead to path dependence and entrapment (vested interests, low costs, established beliefs, sunk investments, favourable institutions)”.

Can we imagine a world in which wise and impartial international regulators would have the authority to implement the right set of norms and policies to safeguard humanity's cultural inheritance, natural and built environments, aesthetic and life saving values for future generations? Creating transnational governance systems to deal with these issues constitutes one of the greatest challenges of our times.

### **Findings and policy lessons**

The ecosystemic approach to live better in a better world encompasses different domains – environmental sciences, social sciences, politics, economics, anthropology, psychology, education, public health, governance and ethics - and entails an integrated holistic theoretical and practical approach, which can be applied to different problems of difficult settlement or solution in the contemporary world.

As by-products of the prevailing models of culture (ecosystemic or non-ecosystemic), ethics, education, culture, natural and man-made environments, physical, social and mental well-being should be supported by the societal structures and integrated in an overall project of quality of life (not treated as separate objects of segmented programmes).

Public policies, teaching and research programmes, nowadays segmented in different domains, should consider the configurations intertwining the different dimensions of being-in-the-world, strengthening their connections and sealing their ruptures, in view of their dynamic equilibrium. The analysis of the events should:

- 1) define the problems within the “boiling pot”, instead of reducing them to the bubbles of the surface (fragmented, taken for granted issues)
- 2) assess the deficits and assets of the dimensions as donors and recipients, considering their relationships in a mutually entangled web (configurations);
- 3) promote the singularity (identity, proper characteristics) of and the dynamic equilibrium between (reciprocity, mutual support) all dimensions, strengthening their connections and sealing their ruptures;
- 4) contribute for the development of an ecosystemic model of culture, as an essential condition for consistency, effectiveness and endurance.

A concerted action by public and private sectors, social organisations, scientific and technical institutions, requires that these various parties cease to defend their vested interests in benefit of a real change in the current world system: instead of taking current prospects for granted, a previous definition of desirable goals and the exploration of new paths to reach should be posited.

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#### Summing-up the Ecosystemic Approach

Public policies, research and teaching programmes consider the dynamic and complex configurations that make up reality, encompassing, as donors and recipients, the four dimensions of being-in-the-world: intimate, interactive, social and biophysical. Projects respect the integrity, resilience, and beauty of human and natural environments as the foundation for a new economic order.

In view of the transition from a non-ecosystemic to an ecosystemic model of culture, a framework for evaluation and planning of public policies, research and teaching programmes critically examine the inter-relationship between natural, governmental, economic and social aspects, as a condition for the emergence of new paradigms of power, growth, wealth, work and freedom.

As new paradigms are embedded into the economic, social, political, cultural and educational institutions, ethical norms, peace building, environmental equilibrium are associated with ethically and ordered social experiences, with the development of morally relevant interests as the bases of rights-bearing, in view of a broad, universally rationalised cultural knowledge.

Problems are assessed in different contexts and settings (micro, meso and macro) as expressions of the interplay of dynamic configurations intertwining the different dimensions of being-in-the-world (diagnosis and prognosis), as they combine to induce the events (deficits and assets), cope with consequences (desired or undesired) and contribute for change (potential outputs).



