



ENSURE PROJECT

Contract n° 212045

WP 1: State-of-the-art on vulnerability types

Del. 1.3: Report on an integral framework for vulnerability

Task 1.5: Psychology, culture and collective value: the Integral Framework

Reference code: ENSURE – Del. 1.3



The project is financed by the European Commission
by the Seventh Framework Programme
Area "Environment"
Activity 6.1 "Climate Change, Pollution and Risks"



Project Acronym: ENSURE

Project Title: Enhancing resilience of communities and territories facing natural and na-tech hazards

Contract Number: 212045

Title of report: Del. 1.3: Report on an integral framework for vulnerability

Reference code: ENSURE – Del. 1.3

Short Description: The deliverable entails the challenge to deal the vulnerability issue adopting the Four Quadrants framework that is the backbone of the Integral theory elaborated by philosopher Ken Wilber. According to this model, every phenomenon can be analyzed under four lenses that are the interior-individual; the interior-collective; the exterior-individual and the exterior collective perspectives. The deliverable aims at showing if this debatable approach can provide a useful contribution to implement an integral framework for vulnerability. In this regard, results are not completely comforting but the importance of the method as tool of analysis of vulnerability elements, and overall, of their reciprocal influence has been recognised especially with reference to the “intangible” aspects.

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Made available to: All project partners, European Commission

Versioning		
Version	Date	Name, organization
0.1	15/02/2009	T6 ECO
0.2	28/02/2009	T6 ECO
0.3		

Quality check

Internal Reviewers: Jürgen Kropp, PIK



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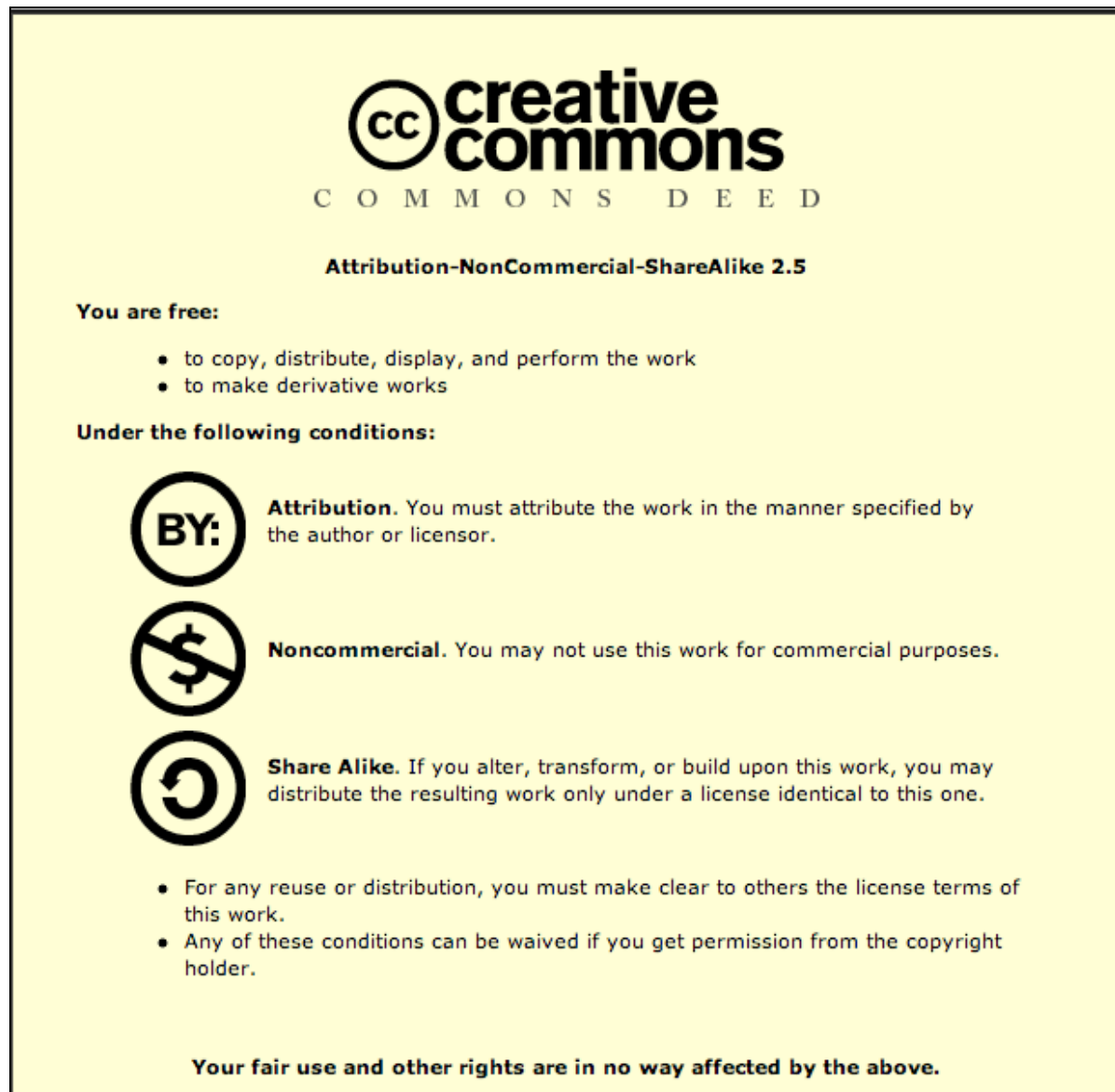


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1 Executive summary

The Integral theory has been developed in the last 30 years. It has as main goal the implementation of a systematic framework that enables the inclusion of all knowledge.

Following the growing attention towards this approach, especially from NGOs and international institutes involved in Sustainable Development initiatives, a specific section of the ENSURE project has been devoted to the exploration of vulnerability through an "integral" perspective. Such a decision has been regarded by partners as an interesting attempt to identify key factors that can affect vulnerability. Nevertheless, related discussions haven't lacked in criticism.

The cultural driver responsible for the shift towards vulnerability, using sustainability as starting point, has been the close link existing between the two themes: nowadays it is widely accepted that the reduction of vulnerability is a significant requirement to guarantee and preserve sustainability.

The integral framework provided by philosopher Ken Wilber is a quite complex approach, grounded on two main models: AQUAL (All quadrants-all levels) and the Spyril Dynamic. In the ENSURE project, the AQUAL model has been taken into account and, in detail, a deepening on the Four Quadrants scheme, that is the core of the model, has been carried out.

According to this model, every phenomenon can be analyzed under four lenses that are the interior-individual; the interior-collective; the exterior-individual and the exterior collective perspectives. They represent four distinct ways to look at any reality.

They are different but they reverberate each other so that they can be correlated and, as a consequence, it 's easier to highlight the influence of intangible aspects of vulnerability on tangible and material aspects.

2 Objectives

In this paper, the Integral theory¹ of Ken Wilber, an approach that is as fascinating as debatable, will be presented to provide a different key to understand vulnerability related to natural hazards.

The interest for this alternative school of thought stems from the awareness of the importance covered by some inner aspects, both individual and collective, in vulnerability dynamics: psychology and culture, as they involve intangible aspects, are often disregarded and as a consequence, the influence they have on tangible aspects as physics or built environment, may be completely neglected.

The close linkage between Sustainable Development and Vulnerability reduction, stressed also on a political level through dedicated agreement ratifications, suggests the second driver to undertake the challenge for a transposition of the Integral theory to Vulnerability. In fact, many International Development institutes have declared to make benefits, in respect to the goals of their projects - depending on the Integral theory application. In the wake of some positive case studies, an attempt of filtering the Vulnerability theme through the Four Quadrant approach, core of the Integral theory, will be presented, and a critical review on limits and opportunities of such an application will be provided.

3 The Integral Theory: an ambitious challenge for Vulnerability reduction

3.1 Concept and definitions of the Integral Theory

Integral theory has been increasingly developed over the past 30 years by Ken Wilber who is one of the most influential contemporary thinkers in transpersonal psychology and spirituality. The theory takes into account knowledge and research from many domains of inquiry including biology, psychology, sociology, anthropology, philosophy and spirituality with the aim of leading to a more integral vision towards personal and societal matters.

According to the author, as reported by Brown (2005a), integral “means to integrate, to bring together, to join, to link, to embrace. Not in the sense of uniformity, and not in the sense of ironing out all the wonderful differences, colors, zigs and zags of a rainbow-hued humanity, but in the sense of unity-in-diversity, shared commonalities along with our wonderful differences”.

Wilber explain the need for an integral vision (comprehensive, balanced, inclusive) as follows: “an integral approach is based on one basic idea: no human mind can be 100% wrong. Or, we might say, nobody is smart enough to be wrong all the time. And that means, when it comes to deciding which approaches, methodologies, epistemologies, or ways of knowing are correct, the answer can only be ‘All of them.’...Since no mind can produce 100% error, this inescapably means that all of those approaches have at least some partial truths

¹ It is worth mentioning that the meaning of integral is not the same as integrated. In fact, the two words correspond to two different approaches. This study on the Integral Framework, based on the studies of Wilber, has been done to verify if it can be useful, and with which kind of contribution, to the implementation of an integrated framework.

to offer an integral conference, and the only really interesting question is, what type of framework can we devise that finds a place for the important if partial truths of all of those methodologies?...To say that none of these alternatives are 100% wrong is not to say that they are 100% right. Integral approaches can be very rigorous in standards of evidence and efficacy, a rigor that some holistic approaches let go of too quickly in an attempt to be 'all inclusive'".

The mainstays of Wilber's work are the Beck and Cowan's Spiral Dynamics and the AQAL model.

Spiral Dynamics is a model of human development that sees human development as proceeding through eight general stages, which are also called *memes* and have pointed out through various names and colours. Beck and Cowan, quoted by Wilber (2000), affirm that "memes are not rigid levels but flowing waves with much overlap and interweaving, resulting in a meshwork or dynamic spiral of consciousness unfolding".

AQAL stands for "All Quadrants, all Levels". Quadrants and levels are the first categories needed for an integral model for the *Kosmos*. Wilber takes up the Pythagorean meaning of *Kosmos* that is "the patterned nature or process of all domains of existence, from matter to math to *theos*, and not merely the physical universe" (Brown, 2005a), uniting in this way the exterior physical universe with the entire realm of consciousness and culture. Apart from quadrants and levels, the other irreducible categories of Wilber's framework are lines, states and types.

A brief description of every category may be as follows:

Quadrants

They represent the perspective from which you can observe a *holon* (Wilber, 1997), in other words, a unit of reality that is simultaneously a whole that is simultaneously part of some other whole (a whole atom is part of a whole molecule, a whole molecule is part of a whole cell, etc). Each *holon* has an interior and an exterior dimension. It also exists as an individual as a collective way. These four dimensions are mapped into four quadrants, pointed out as Upper Left (UL), Upper Right (UR), Low Left (LL) and Low Right (LR). They respectively correspond to the domains of "I"(interior-individual), "We" (interior-collective), "It" (exterior-individual), "Its" (exterior-collective).

Levels

Levels are components of quadrants. Hence, each dimension of reality (quadrants) can be broken down into a sequence of at least a dozen major levels or waves of development (beige, purple, red, blue, orange, green, yellow, turquoise, psychic, subtle, casual and nondual), stretching from matter to body to mind to soul to spirit.

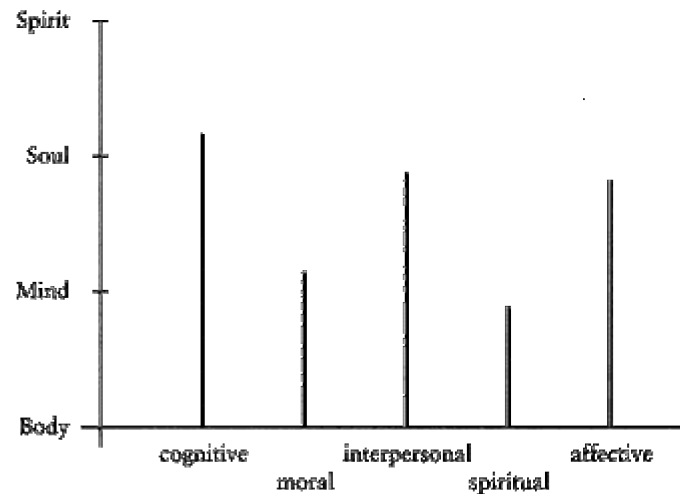


Fig. 1 An example of integration between levels/waves (vertical axis) and lines/streams (horizontal axis)

Lines

Called also streams, they lie along the previous levels of development, including cognitive, moral, spiritual, aesthetic, somatic, spiritual, affective, imaginative, interpersonal aspects.

States

They are fleeting, temporary aspects of phenomena found in all four quadrants. In the Upper-left, for example, there are the three great natural states referred to consciousness: waking, dreaming, deep dreamless sleep.

Types

They are horizontal styles available to any developmental level within quadrants. Example of types include gender types (UL), body types (UR), cultural types (LL) and type of biomes(LR).

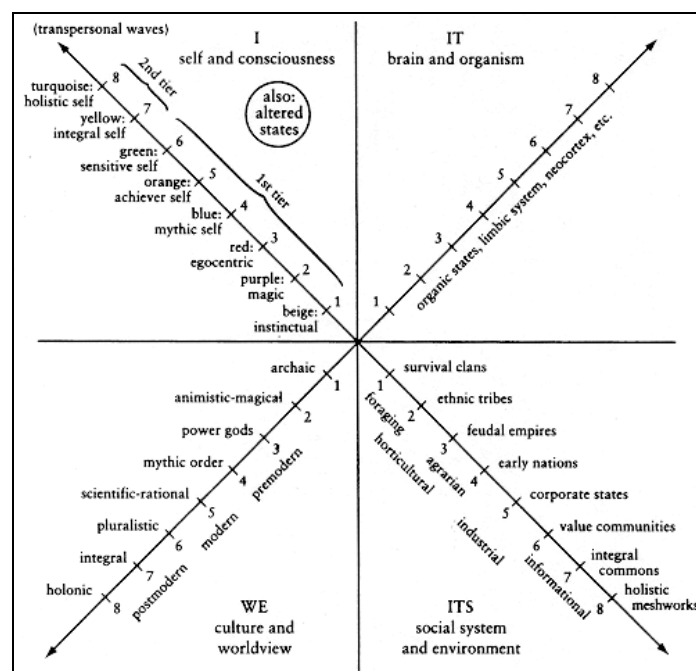


Fig. 2 Some examples of the Four Quadrants in Humans (Wilber, 2000)

With respect to human holons, when the Spiral Dynamics is plugged into an “all-quadrant, all-level” conception, the result appears as shown in fig. 2. Already starting from this diagram, Wilber (2000) states that the mind-consciousness quadrant (UL) is intimately related to the brain-body quadrant (UR). At the same time, according to Wilber, reducing consciousness (“I”) to brain mechanisms (“It”), as most orthodox researchers do, is a mistake.

At this point, it seems to be a more profitable choice to carry on with a presentation of major applicative cases of Integral theory (according to different level of deepening), instead of supplying a further description of theoretical aspects.

A complete application of the Integral theory (including levels, lines and so on) need an high and advanced level of knowledge of the model. Bearing in mind that this report represents a first approach to discuss the issue of vulnerability from an integral perspective, it is worth specifying in advance that the ENSURE practice has been exclusively implemented on the basis of quadrants, as they represent the core element of the Integral theory.

3.2 The application of the Integral Framework into Sustainable Development projects

The Integral theory has found a systematic arrangement through the foundation of a dedicated Integral Institute, whose main objective is helping global leaders from all arenas to improve the human condition. From the institute perspective, only a comprehensive, integral and non-partial approach to interdependencies can lead to an efficacious answer to problems.

Sustainable Development is one of the primary branches of research of the Integral Institute. According to Integral Sustainable Development practitioners, the chance a Sustainable Development initiative has of becoming a long-term, sustainable solution, grows accordingly with the dimensions of reality that have been taken into account. Supporting this thesis, Brown (2005a), states that a solution based on economic analysis alone is less sustainable than one that incorporates economic, ecological, and social understandings. This is, in turn, less viable than a solution that also includes psychological, cultural, and religious perspectives. The bottom idea of Integral Sustainable Development is that “everyone is right” and that each of the myriad approaches and variables concerning Sustainable Development are thereby brought together into a unified front so that they can complement, inform, and supplement each other. Hence, since a wider share of reality is taken into account by using an Integral framework, Sustainable Development initiative have, through its application, a higher chance of being successful.

Brown (2005c), draws up the steps needed to use the Quadrants to implement Sustainable Development Initiatives:

1. Clarify the initiative or central issue to be addressed;
2. Identify the forces revealed by each quadrant which might thwart the initiative or hinder the resolution of the problematic issue;
3. Identify the forces revealed by each quadrant which might support the initiative or help resolve the issue;
4. Choose the thwarting and supporting forces which seem likely to have the greatest influence on the ultimate success or failure of your efforts.



Fig.3 Use of the Quadrants for Sustainable Development Initiatives (Brown, 2005c)

5. Design an integrated response which addresses the major thwarting forces and builds of the most influential supporting forces. Use tools and methodologies appropriate to each quadrant to respond to forces in that quadrant;
6. Implement the response;
7. Measure results to the greatest degree possible. Gather feedback;
8. Repeat process and design a more tailored response, based upon previous results and feedback.

An important meeting for this issue was held up in France, in 2006 October, by the Integral International Development Center of the Integral University, founded to explore and apply an integral approach to the world's most pressing development challenges. The participants to the event came from development banks, corporate consulting, private sectors, non-governmental organizations, community groups and research institutes involved in Integral approach applications. The Integral practitioners have found that using an integral approach in international development helps to simplify complexity, to better understand where problems originate, and to craft more appropriate responses to development issues (van Shaick, 2006). They have checked that the strong point of the approach is the recognition of the importance of some "intangible" aspects, as psychology and culture, in dynamics of some phenomena. For example, in HIV and AIDS pandemic, deepest causes are often found in the interior of individual and collectives rather than in the exterior; in fact there are contributing factors that relate to individual mindsets and beliefs, cultural traditions and norms.

Elements of Integral theory (quadrants only) have been used by UNDP as part of the "Leadership for Results" programme which purpose is to assist nations for the achievement of one of the Millennium Development Goals: Begin to reverse the HIV/AIDS epidemic by 2015. In detail, the 4Q framework methodology has been used:

- a) to understand the HIV/AIDS epidemic in its social, economic and cultural context, in a given country or locale through the identification of the main forces that promote its transmission (an example is shown in fig. 4);

INDIVIDUAL ATTITUDES <ul style="list-style-type: none"> • Fear and confusion • Uninformed/disinformed • Hopelessness, Despair • Denial, apathy • HIV=AIDS=DEATH 	INDIVIDUAL BEHAVIOUR <ul style="list-style-type: none"> • Unprotected, unsafe sex • Discrimination, stigmatization • Lack of respect of compassion • Unfocused, irresponsible • Few people getting tested
COLLECTIVE VALUES <ul style="list-style-type: none"> • Women's status in society • Gender relations • Foreign, non Swazy-problem • HIV/AIDS as punishment • Polygamous tradition and "polygamous mindset" • Common myths about HIV/AIDS • Sex as taboo subject • Lack of role models 	SYSTEMS AND STRUCTURES <ul style="list-style-type: none"> • Insufficient education, dissemination of HIV/AIDS information • Laws supporting perpetuating women's disempowerment • Bureaucratic hurdles • Not enough coordination, management and partnership • Insufficient training and capacity development • Insufficient resources at all levels • Insufficient education and prevention strategies among youth • Conflicting messages and initiatives • Many initiatives do not focus on or consider rural communities

Fig.4 Main forces propagating HIV/AIDS as pointed out during a UNDP training, June 2004 (Brown, 2005b)

- b) to highlight the interactions between individual and group attitudes or norms and consequent actions by individuals and groups;
- c) map the epidemic in terms of response from the perspective of four distinct domains;
- d) show gaps in the type of conducted responses.

In respect to this last point, it has been found that most responses occur in the area of the collective systems and structures and few involve the other quadrants.

According to UNDP, such an Integral framework is able to gather under one umbrella all the concepts separately developed for many years by thought-leaders worldwide. A similar concept has been expressed by van Shaik²: "The Integral approach is the bigger picture within which all the ideas and developments with which UNICEF is involved must be seen" (Brown, 2005a).

UNICEF has undertaken the challenge of an integral approach in different projects. Just as an example, June Kunugi³ has used the I.F. to develop all assessments, advocacy programs, speeches, communication strategies and to identify the etiology of destructive behavior. As referred by van Shaik(2006), Kunugi has stated that the I.F. can "serve as the basis for a strategy to bring about social change and transformation". Another UNICEF initiative, carried on by Dr. Monica Sharma, is related to the development of the regional Women's Right to Life and Health project in South Asia.

² member of iShaik Development Associates consultants for UNICEF, The World Bank and DFID

³ the Senior UNICEF Representative to Oman

Psychological and Spiritual Assets (healthy mind, healthy spirit)	Physical and Behavioral Assets (healthy body, healthy actions)
Cultural Assets (healthy cultural values, beliefs, attitudes)	Social and Ecological Assets (healthy environment, social systems, policies, services)

Fig. 5 BCHC Capacity Building Framework

An interesting purpose of application of I.F. aimed at enhancing “building capacity” has been presented by Tam Lundy⁴. This concept shares a similarity to some themes related to vulnerability, such as coping capacity, learning capacity or adaptive capacity. For building capacity Lundy (2006) means “processes and activities that maximize human potential. A comprehensive integrated approach to capacity building nurtures excellence, expansion and positive change in all area of human experience: social, environmental, economic, physical, psychological, spiritual and cultural”.

Firstly, from the 4Q framework, BC Healthy communities have brought together a focus on all assets of a community (fig. 5). Then, the BCHC team of facilitators have analyzed the current approaches to fostering community health and development, and found that most work addresses the LR needs and issues, with much less focus placed on the other quadrants.

Finally, this analysis has informed their Integral Map of Community (fig. 6) and their subsequent selection of methodologies and practices to their healthy communities approach (Hochanchka, 2006).

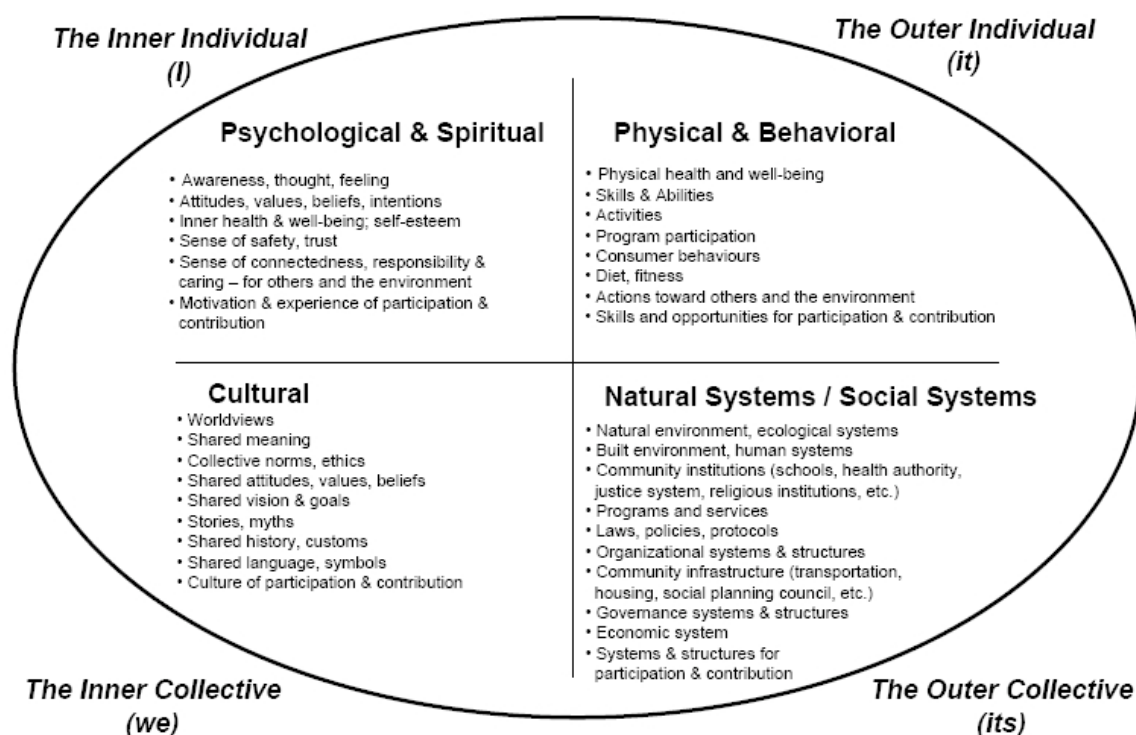


Fig. 6 An integral map of community

⁴ Education and Development Coordinator, BC Healthy Communities Initiative, Canada

Up to now, global-oriented practices with wide ambitious objectives have been analyzed (UNICEF, UNDP, etc). On the contrary, Hamilton's purpose (2006) consists in utilizing the Integral Framework as a basis for developing and measuring the Well Being of Bowen Island in Canada.

Adapting the diagram provided by Brown (fig. 3) where

- "I" subjective realities represent the domains of Consciousness (self-consciousness, states of mind, psychological development, emotions, mental models, will);
- "We" intersubjectives represent the domains of Culture (shared values, culture, worldview, customs);
- "It" objectives realities represent the domains of Behaviour (visible individual actions, race, gender, age and other bio-physical features, bodily health and activity);
- "Its" interobjective realities represent the domains of Systems (social systems, built environment/artefacts, structure/infrastructures, economic systems, political orders, resource management)

Hamilton come to the following pattern (fig.7):

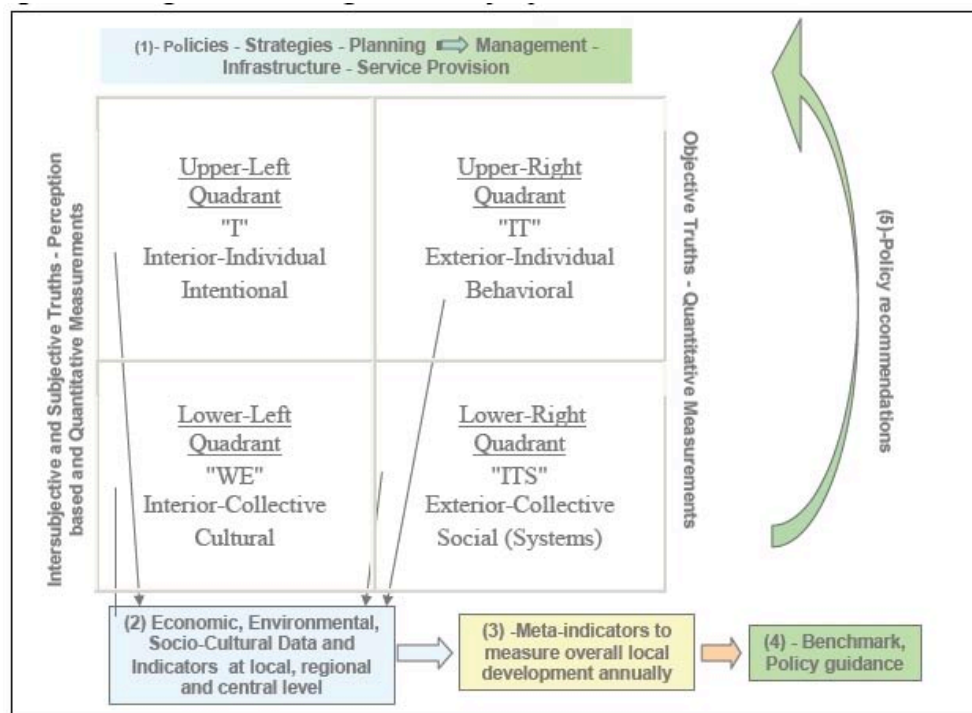


Fig. 7 Integral monitoring and policy cycle (Hamilton, 2006)

The diagram shows an iterative use of the 4Q tool. Hence, according to Hamilton, such an integral model would allow:

- to find the most appropriate indicators, making sure that all key-perspectives (quadrants and levels) are taken into account;
- to mediate and translate between multiple interests of many community stakeholders;
- to develop the capacities of professional community managers;
- to assist policy and decision-makers to become more balanced and comprehensive in their decisions;

- to enable benchmarks comparisons among stakeholders groups and other jurisdictions and, finally, to repeat the process in the light of the results and feedback.

3.3 Expected ways of contributions of Integral Theory for Vulnerability reduction

Case studies previously presented have shown that the uses of “4 Quadrants scheme” can lead to four main typologies:

- a. A case for organizing knowledge;
- b. A tool of analysis to investigate relationships among factors in respect to a given phenomenon;
- c. A vector of change aimed at providing suggestions to solve problems;
- d. A check-list of what has been done in relation to a given phenomenon.

Some comments are needed. The Four Quadrants framework is, in its basic look, a box that is filled according to a taxonomic criterion. In this perspective, Brown (2005a) refers to it as “a simple way to organize the innumerable subjective and objective dimensions of individuals, societies, and the environment”. In terms of tool of analysis Brown (2005c) states “By looking at a sustainability initiative through all of the quadrants, we are able to identify most, if not all, of the major forces which will influence the success or failure of that initiative”. These actions match with steps 2 and 3 suggested by Brown for a correct use of 4Q devoted to sustainable initiatives (see § 2.2).

The use of 4Q as a vector of change is enclosed in steps 5 and 6 of Brown’s list when he refers to the possibility of designing and implementing an integrated response to a specific question.

As reported by Hochachka (2006) the integral practice allows to “inform learning and leadership initiatives, to link methodologies for working with self, culture and nature; to guide community processes in larger development initiative, to enable shifts in mindsets, cultures and behaviours”.

The typology d) translates the point no. 7 of Brown’s: a check action consisting of results measurement of the implemented response.

This essential simplification about uses seems to fit quite well a statement issued by Walberto Virgilio Tejeda Guardado⁵. On the occasion of “Integral International Development Gathering” event (van Shaik, 2006), he has declared: “The integral approach helps us in our work in three ways. First, it confirms what we have been doing (a-d); second, it provides an inquiry into where we still have gaps in our approach and how we can fill them (b); and third, it is a foundational and theoretical base that helps us to dialogue with other fields of wisdom and with other development organizations (c)”.

Leaving aside the last typology of use, that can be considered as cross-cutting the other, the three main possibilities can conceptually put (fig.8) on an axis representing the level of increasing “complexity”. The different dimensions of oval shapes symbolize also the increasing level of opportunities that emerges when the Four Quadrants framework is

⁵ Project Coordinator of Centro Bartolome de las Casas (San Salvador). The institute was founded to research, disseminate and create new alternative for development and community wellbeing.

employed as a tool of analysis or, even, as a vector for change instead of being used as a simple box.

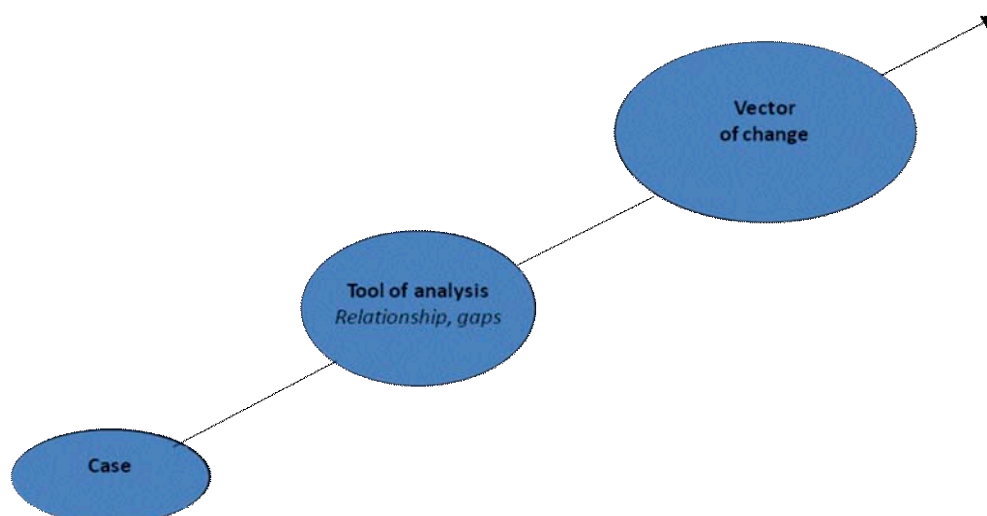


Fig. 8 Main uses of 4 Quadrants scheme

The challenge of an application of an “integral” vision becomes more and more ambitious when it addresses a multifaceted issue as vulnerability. Mitigating vulnerability from natural hazards has been recognized as a support action for sustainable development processes even in occasion of the World Conference on Disaster Reduction, held in Kobe in 2005. Previously, during the International Decade for Natural Disaster Reduction (1990-1999), the UN General Assembly established the International Strategy for disaster Reduction (ISDR) with the aim of enabling communities to become resilient to the effects of natural, technological and environmental hazard, and to proceed from protection against hazards to the management of risk, by integrating disaster prevention strategies into sustainable development (UN-DESA, 2005).

Disasters, in fact, as a consequence of natural hazard can reverse years of development work and, at the same time, vulnerability to these hazards can increase due to rising poverty, a growing global population (that increases the exposure level via the creation of settlements in risk prone areas), armed conflict and other underlying development issues (Shipper & Pelling, 2006). Hence, there is a clear need to merge the goals of sustainable communities and loss reduction activities as underlined by Mileti (1999) in the book “Disaster by Design” in which the author gathers the findings of the Second National Assessment of Research on Natural Hazard. One finding of the above mentioned assessment was the increased risk of natural disaster in areas with unsustainable development. Sustainable development is affected and limited by the destructive environmental, economic and social effects of disasters. Disasters appear as result of hazards and vulnerability, hence, one goal has to be vulnerability mitigation. Even the FEMA’s definition for mitigation is linked to sustainability: “mitigation is defined as any sustained action taken to reduce or eliminate long-term risk to life and property from hazardous event”.

These considerations support everything that has been pointed out before on a generic development or sustainable initiative as well as a vulnerability reduction theme.

In detail, the work described in next paragraphs, aims to seek out adding contributions on Vulnerability knowledge provided by the use of the 4Q framework and to check its capacity in terms of a vector of change.

4 The exploration of Vulnerability through the 4 Quadrants approach

4.1 The Four Quadrants framework

According to the AQAL theory, quadrants constitute four important ways to interpret complex phenomena or four unique lenses to look at the same occurrence.

The first step towards an integral vision doesn't consist in putting together elements, but rather in breaking down every reality with respect to its exterior and interior dimensions, in turn divided into individual and collective dimensions (fig.9).

All individuals have an interior no one else can see, like thoughts, emotions and self-awareness. At the same time, they have an exterior which others can see, such as body or behavior. With collectives, there is an interior, like shared values, customs, morals and an exterior, such as economic and political systems, habitats, physical environment, etc. These four perspectives are mirrored in the use of personal pronouns. So, the interior-individual arise as "I", the interior-collective as "We", the exterior-individual as "it" and, finally, the exterior-collective as "Its".

<p>I</p> <p>Interior-Individual</p> <p>Intentional</p> <p>Subjective</p> <p>Upper Left</p>	<p>IT</p> <p>Exterior-Individual</p> <p>Behavioral</p> <p>Objective</p> <p>Upper Right</p>
<p>WE</p> <p>Interior-Collective</p> <p>Cultural</p> <p>Intersubjective</p> <p>Lower Left</p>	<p>ITS</p> <p>Exterior-Collective</p> <p>Social</p> <p>Interobjective</p> <p>Lower Right</p>

Fig. 9 Wilber's Four-Quadrant Structure

In respect to this observation, the quadrants can also be referred to Consciousness (What I experience), Behaviour (What I do), Culture (What We experience) and Systems (What we do) respectively. Reversing the point of view, any occurrence can be experienced in a subjective or in an objective way by the individual, that becomes an intersubjective or an interobjective way according to a collective perspective.

The Upper-Left quadrant (UL) represents all the factors that directly influence individual experience. It covers the entire realm of Self and consciousness. For this reason, it includes thoughts, intuitions, sensations, intensions, beliefs and feelings.

The Lower-Left quadrant (LL) represents all the realms and reasons that directly influence the experience of a group and the world. It covers the intersubjective, internal reality of a collective and include culture, worldview, beliefs, ethics and values that are shared.

The Upper-Right quadrant (UR) represents physical, objective reality of an individual. It includes material body (also brain), technology, behavior and anything is physically measurable and visible in time and space.

The Lower-Right quadrant (LR) represents the arena of objective descriptions and explanations of how social, economic, political and ecological systems operate. It includes physical structures, modes of information transfer, social structure, governance processes, organizations, built and natural environments, community institutions and infrastructures.

4.2 Criteria and methodology followed to draw up the Four Quadrants framework

The 4Q framework, in terms of key element of the Integral theory, can be considered outside of all traditional approaches adopted by scientific community to examine the vulnerability field. Gathering impact reactions towards such a tool from ENSURE partners, as a sample researchers and experts of risk, can result an interesting practice to underline the major perplexities and divergent points in respect to current interpretations and approaches to the issues at stake. For this reason, it has been asked to the partners to provide, according to their experience, inputs fitting with every dimension, in the wake of only few entries provided for every quadrant (UL, UR, LL, LR) and of a brief description, as follows:

"The Integral Theory, developed by Ken Wilber, is nowadays widely applied in Sustainable Development projects. The main aspect of this theory is the need of including the interior dimensions of development that is related to cultural and personal aspects. The FOUR QUADRANT framework is an analytical tool (of the I.F.) that can be used to explore the relationship between intentions and values, on the one hand, and the actions on the other hand and it does so at both on the individual as well as the collective level. Through the adoption of this tool we wish to show how immaterial aspects (left side of the framework) affect 'material' and more evident aspects."

Responses have been different, even if a ground skepticism has shined through partners' contributions. A major deepening on such comments will be faced at the end of this report.

The received contributions, referring to different aspects of vulnerability, have been integrated with the results of the state-of-art realized by partners. By doing so, a first image of factors likely to affect vulnerability both in an increasing or decreasing manner, is created. The obtained version, merely being a collection of topics, was characterized by redundancy and presence of linked issues to be synthesized.

In some circumstances, it was even difficult to establish if a given factor should have fallen into a quadrant or into another one, due to a sort of confusion caused sometimes by the headlines of the quadrants themselves. As an example, following sounder theories, aspects referring to social field should have been included in the LL quadrant devoted to "culture and shared value". On the contrary, Wilber (2000) states that shared values, perceptions, cultural habits, ethics represent intersubjective patterns in consciousness whereas physical structures and institutions, geopolitical structures, modes of information transfer, social structures represent their correspondents in terms of interobjective realities, in other words, the social system (LR quadrant).

Another topic at issue that can be subjected to more than one interpretation is "ecosystems". Since it is properly connected with the physical environment, the headline "Physics and behavior" that characterized the UR quadrant can be misleading. Ecosystems, both for their collective aspects and their functional structure, have to be included in the LR quadrant as well.

Furthermore, Wilber operates a distinction between psychology and behavior in that "behaviour" mirrors in actions that can be seen and have an evidence whereas "psychology" is an interior and invisible aspect. On the contrary, according to some partners, the line of demarcation between psychology and behavior is so thin that the two concepts have to be

put in the same quadrant in such a way to represent a globally “human” perspective to distinguish from the physical one.

It should be recognized that the description of “the integral map of human possibilities”, as Wilber names it, is, by his own admission, “a little bit abstract” and that only applications provided by the practitioners of the Integral theory have allowed to tease out the opportunities of the approach. In particular, the list of suggestions mentioned in §2.2, provided by Brown, co-director of Integral Sustainability Center, have been adopted to build up the 4Q framework.

“Vulnerability reduction” has been pointed out as the “sustainability” initiative, towards which we need to focus the following analyses. As a consequence, all the inputs, in terms of factors influencing the success and the failure of the initiative alike, have been put into the quadrants.

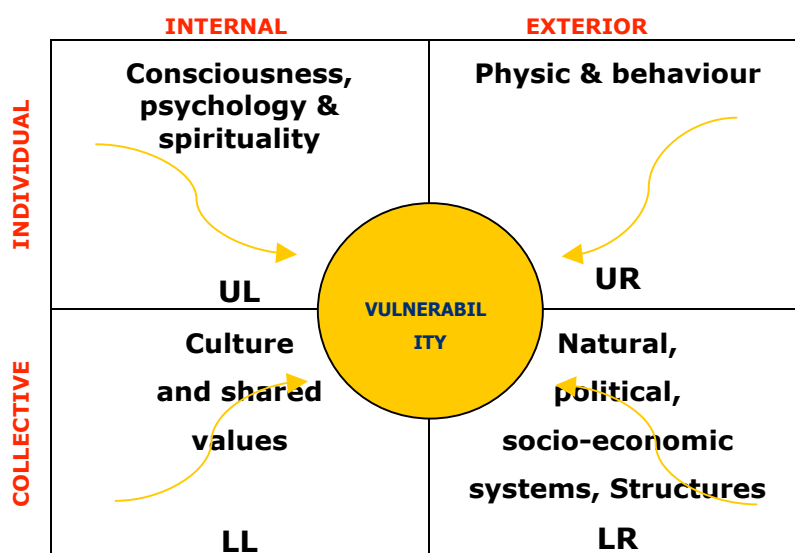


Fig. 10 Adaptation of 4Q framework addressed to vulnerability reduction

In particular, an attempt of operating a synthesis on the different available inputs having connection with a given topic has been carried on, as well a process of abstraction on issues that were too specific and hazard-oriented: making the application of this framework as general as possible, without exclusively reference to a particular aspect or to a given hazard, was, in fact one of the objectives of this task.

Another fundamental distinction among the collected factors has been put in practice depending on the “nature” of the topics. In fact, some issues had a general content in that they had a self-sufficient existence, not directly connected with risk, whereas other were closely linked to the issue at stake. Hence, whenever entries had an evident pertinence with risk they have been marked with a “R” symbol.

Following these criteria, the 4Q framework has been tailored for the Vulnerability issue in the layout showed below.

THE FOUR QUADRANTS FRAMEWORK for VULNERABILITY

<p style="text-align: center;"><u>Consciousness, psychology & spirituality</u></p> <ul style="list-style-type: none"> ✓ Individual personality and characteristics ✓ Level of personal empowerment ✓ Religious beliefs and personal philosophy ✓ Inner health and well-being ✓ Self-assessment ✓ Education level ✓ Willingness to adaptation and openness to change Ⓡ Personal experience of participation Ⓡ Level of personal motivation with risk issues Ⓡ Awareness and perception of risk Ⓡ Sense of responsibility for protection for self and others Ⓡ Trust in defences to provide protection Ⓡ Sense of safety/security Ⓡ Level of trust in local authorities and risk managers 	<p style="text-align: center;"><u>Physic & behaviour</u> (both human and built environment)</p> <ul style="list-style-type: none"> ✓ Outer individual's characteristics (e.g. age, gender) ✓ Attitude towards social/kinship networks ✓ Physical disability ✓ Lengths and nature of permanence in the area (e.g. worker, resident) ✓ Tenure arrangements (e.g. owner occupied or rented properties) ✓ Habits and style-life Ⓡ Individual preparedness Ⓡ Insurance Ⓡ Attitudes towards risk management ✓ Quality of building fabric and construction including cultural elements ✓ Building characteristics (e.g. <i>number of floor, type of housing</i>) ✓ Likelihood of collapse, thresholds levels Ⓡ Adequacy post-disaster rehabilitation techniques for building fabric Ⓡ Adequacy, effectiveness and integration of mitigation measures Ⓡ Techniques typology (active/passive) used for mitigation
<p style="text-align: center;"><u>Culture and shared values</u></p> <ul style="list-style-type: none"> ✓ Importance attributed to cultural heritage ✓ Shared language and understanding ✓ Traditional forms of communication ✓ Political ideologies and preference to individualized solutions ✓ Sense of belonging to local area/people 	<p style="text-align: center;"><u>Natural, political, socio-economic systems</u> (organizational structures)</p> <ul style="list-style-type: none"> ✓ State of the environment (e.g. <i>large-scale deforestation or concreting of urban area</i>) ✓ Typology of settlements (e.g. <i>mega-city, urban, rural</i>) ✓ Land use, spatial development and planning system

<ul style="list-style-type: none"> ✓ Cultural background towards planning ✓ Capacity for and openness to social and community learning ✓ Community cohesion Ⓡ Community memory about hazards Ⓡ Shared customs, meaning and trust for hazard protection Ⓡ Culture and history of participation in risk management Ⓡ Shared thresholds of acceptable risk Ⓡ Interpretive models of disasters 	<ul style="list-style-type: none"> ✓ Political and institutional arrangements necessary for development ✓ Properties of (micro/macro) economic systems (e.g. <i>robustness</i>) ✓ Accessibility to financial resources and incentives ✓ External aid mechanisms (including social support networks) ✓ Accessibility to services and public facilities ✓ Mechanisms for dealing with transgression ✓ Lifelines and strategic infrastructures functionality Ⓡ Appropriate use of building in hazardous area (e.g. <i>lower floors in flooding areas</i>) Ⓡ Accessibility to hazardous areas Ⓡ Evacuation/transportation routes and evacuation procedure/plans Ⓡ Existence and awareness of risk maps Ⓡ Existence of hazard forecasting and warning systems Ⓡ Assimilation of mitigation measures into normal practices Ⓡ Incorporation of mitigation into specific development project Ⓡ Existence of institution specific hazard addressed for risk assessment, economic assessments of impacts and emergency Ⓡ Competition between different hazards emergency response agencies Ⓡ Institutional and organizational preparedness at different scale Ⓡ Effectiveness of communication processes on risk issues and adequacy of communication media Ⓡ Political commitment to reduce impacts from disasters risk & c. change Ⓡ Relations with wider political and institutional structures (e.g. <i>cooperation</i>) Ⓡ National/regional norms/law for disaster risk management Ⓡ Availability of formal/informal mechanisms of risk insurance Ⓡ Participatory framework about risk decision Ⓡ Integration hazard knowledge and coping mechanisms of local people
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4.3 Interlinkages among quadrants: one way, reciprocal and chain influences

The 4Q scheme of Wilber's integral approach aims at mirroring four distinct dimensions of reality although these dimensions "arise together, influencing and informing each other in every moment". The integral approach itself "involves a disciplined process of relating each quadrant's experience and data to the remaining three quadrants" (Brown, 2005a).

Potential relationships, arising among the four aspects, can appear more or less evident essentially due to their "material" feedback. Economic consequences are commonly the most tangible effect of the occurrence of a given event; other aspects are hardly measurable, especially those finding their primary root in an "immaterial" sphere (psychology, culture).

An effort to underline some hidden relations among "tangible" and "intangible" aspects is reported below. Some of them are of a one-way typology, others are reciprocal (interaction between two aspects in a mutual manner) or, in some cases, even chained.

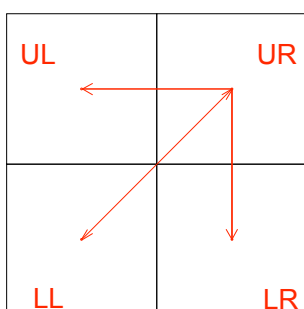
The above mentioned relationships are described through:

- an arrow linking the quadrants involved and an identifier number;
- an extract of the 4Q framework, focused on topics at stake;
- a summary diagram, for each group of relationships, stressing the reciprocal and chained aspects among factors;
- explanatory comments.

1st group

1	2	3	4
UR → UL	UR → LR	LL → UR	UR → LL

UL	UR
• Self- assessment	• Attitude towards social/kinship network
• Shared language and understanding	• Relation with wider political and institutional structures
LL	LR



Elements affecting vulnerability at a personal-interior level are gathered in the first quadrant. Nevertheless, in case of an adverse event, the extension and the "quality" of social network represent an important resource in terms of coping strategy. The awareness of having a social network can improve self-assessment and, in particular, can influence the "self-efficacy" aspect as personal capability to carry on a particular strategy (1).

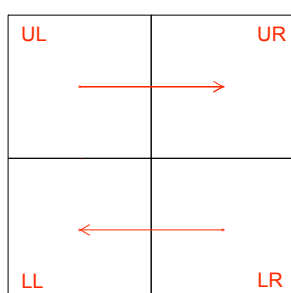
Some psychological studies have showed a major propensity to look for help (both formal and informal) in people having a highly perceived level of control that includes the possibility of trusting others (Lavanco, 2003). A social network

can mean having close peer friendships, relatives and also connections with organizations and institutions (2). A personal attitude towards this aspect can be of primary importance to realize networks. The availability of a common language to communicate and share information is an indispensable requirement to develop social relationships (3) and can be, at the same time, an effect of the above mentioned personal attitude. In other words, a personal bias towards making friends with other people can become a driver for learning a new language and broadening one's circle (4).

2nd group

5	6
UL → UR	LR → LL

UL <ul style="list-style-type: none"> Religious beliefs and personal philosophy Education level Awareness & perception of risk Level of trust in local authorities and risk managers 	UR <ul style="list-style-type: none"> Individual preparedness Insurance
<ul style="list-style-type: none"> Community cohesion LL	<ul style="list-style-type: none"> Typology of settlements (e.g. <i>mega-city</i>, <i>urban</i>, <i>rural</i>) LR



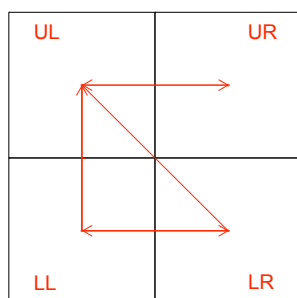
As reported in the contribution devoted to psychological aspects, especially in some religious communities, personal beliefs can lead people to undertake by themselves adequate mitigation measures. In specific surveys dedicated to the assessment of reasons explaining why not to engage in any kind of mitigation/preparedness, the education level can play a role as well. Other strong reasons recognized as vectors for personal preparedness initiative are awareness and perception of risk (Prater and Lyndell, 2000) and the level of trust in local authorities and risk managers (5).

Referring to the collective sphere, community cohesion can be affected by spatial criteria (6): it is rather obvious that a geographic dispersion as happens, for example, in urban sprawl phenomena or urban development, can't contribute to build a sense of community. This aspect carries a hidden consequence in terms of coping resources: as reported by Lavanco (2003), small communities are more inclined to respond to failure of formal structures (institutions, fire service, police forces) in an emergency context with social informal resources (interpersonal relationships, family, friendship, work and neighbourhood kinships).

3rd group

7	8	9	10	11
LL → UL	LR → LL	LL → LR	LR → UL	UL → UR

<p>UL</p> <ul style="list-style-type: none"> • Awareness & perception of risk • Level of trust in local authorities and risk managers • Sense of safety/security • Trust in defences to provide protection 	<p>UR</p> <ul style="list-style-type: none"> • Individual preparedness • Insurance • Attitude towards risk management
<p>LL</p> <ul style="list-style-type: none"> • Interpretive models of disasters 	<p>LR</p> <ul style="list-style-type: none"> • Institutional and organizational preparedness at different scale • Political commitment to reduce impacts from disaster risk & climate change • Political and institutional arrangements necessary for development • Existence of institution specific hazard addressed for risk assessment, economic assessments of impacts and emergency • Effectiveness of communication processes on risk issues and adequacy of communication media • Existence of institution specific hazard addressed for risk assessment, economic assessments of impacts and emergency • Existence of hazard forecasting and warning systems • Existence and awareness of risk maps

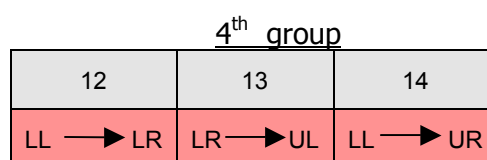


The personal perception of risk is surely different from one individual to another but it can be extremely influenced by collective perception through the “construction” of the risk (7). According to the socio-cultural theory of risk, having in anthropologist Mary Douglas its stand-out figure, every form of society elaborates its own vision of the natural environment and it produces shared evaluative criteria and standards that draw what is acceptable, what is safe and what is risky.

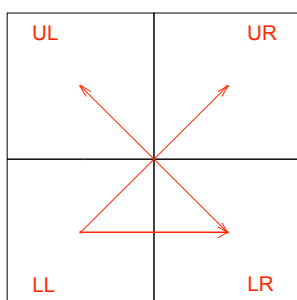
In respect to this kind of process, social institutions (8) are in charge of giving solutions, analyses categories and shape to individual and collective responses to uncertainty situations; quality and modality of information processes (8), play a core role as well. (Lavanco, 2003). At the same time, models of disaster globally built by a specific society can drive policymakers to undertake a range of measures (9), maybe only to keep at bay the public opinion and the fears of the collective community. Anyway, the actions made, or at least, the commitment showed by policy-makers is a well-evaluable factor in terms of determining the onset of trust in local authorities and risk managers in individuals (10).

The last ring of the chain is once again individual preparedness: the lack of actions undertaken by authorities in charge of taking decisions aimed at mitigating hazards and reducing impacts could have, as a direct consequence, a loss of confidence in institutions so that citizens are endeavoured to supply protection solutions on their own (11). The same effects can be determined by a scarce sense of safety/security or trust in defence structures: trust in institutions and other structures can be strengthened by the existence of emergency presidiums and forecasting and warning network implemented on specific surveys in the hazardous areas so that people can perceive a sense of control on the territory.

To sum up, perception is extremely important for disaster preparedness and response processes because it can significantly influence behavior and can be the trigger for specific actions.



UL	UR
<ul style="list-style-type: none"> Level of personal empowerment 	<ul style="list-style-type: none"> Attitude towards social/kinship network
<ul style="list-style-type: none"> Sense of belonging to local area/people 	<ul style="list-style-type: none"> Accessibility to financial resources and incentives External aid mechanisms (including social support networks) Accessibility to services and public facilities Political and institutional arrangements necessary for development
LL	LR



Feelings of belonging and attachment to people and places (12) facilitate involvement in community responses following disasters and increases the access to, and the use of, social support networks (Kaniasty & Norris, 1999, van den Eyde & Veno, 1999 as reported by Paton, 2001). Social support networks, in turn, represent, together with economic and technique resources, important tools for increasing the sense of control of the events and, as a consequence, the level of personal empowerment (13).

The major degree of disaster-related vulnerability, determined in specific groups of people can be in fact not only a consequence of a larger exposure but can also be attributed to a lack of resources to face it. For this reason the guarantee of an equal accessibility to services and public facilities, as well as to financial resources and incentives, constitutes an essential requirement to reduce vulnerability. From this perspective, initiatives undertaken by policy makers to promote development are a valuable starting point.

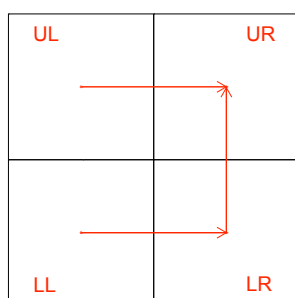
Finally, the persistence of a strong sense of community can influence the personal inclination to make friends within community or it can lead to establish other kinds of relationships based on the common sense of belonging to a group and on shared values (14).

5th group

15	16	17
LL → LR	LR → UR	UL → UR

UL	UR
<ul style="list-style-type: none"> • Willingness to adaptation and openness to change 	<ul style="list-style-type: none"> • Quality of building fabric and construction including cultural elements • Building characteristics (e.g. number of floor, type of housing) • Likelihood of collapse, thresholds levels • Adequacy post-disaster rehabilitation techniques for building fabric • Adequacy, effectiveness and integration of mitigation measures • Techniques typology (active/passive) used for mitigation • Personal Habits and style-life
<ul style="list-style-type: none"> • Shared thresholds of acceptable risk 	<ul style="list-style-type: none"> • Land use, spatial development and planning

<ul style="list-style-type: none"> Cultural background towards planning 	<p>system</p> <ul style="list-style-type: none"> National/regional norms for disaster risk management Assimilation of mitigation measures into normal practices Incorporation of mitigation into specific development project
LL	LR



The threshold for what is meant by “acceptable risk” is defined on a “collective” scale, generally by the scientific community. Political stakeholders and local authorities are called to supply the realization of specific plans (15) that should be aimed at facing the different aspects concerned with “accepted” risk and should rule out only the “residual” risk to an emergency management. In this respect, a rooted cultural proneness towards planning can surely support such a typology of actions.

Decisions taken at a political level, especially for what concerns planning, can have considerable effects on the physical environment and, in particular, on the built environment (16). From this perspective, the characteristics, the quality and the construction techniques for buildings can be established on a legal level through, for example, specific building codes for building designed for civil use or for the preservation of cultural elements.

Moreover, as a consequence of political decisions and of the release of economic incentives, some mitigation measures could be absorbed into normal practice. Referring to this point, for example, the ordinary maintenance of mountains areas, and in particular brushwood, can be a community task that could be taken care of by locals without waiting for dedicated services and external aid. This can deeply affect personal habits and daily life (16) but it is also strongly dependent on personal response and openness to change (17).

5 A critical review of the application of the Four Quadrants framework

The integral theory aims at providing a systematic integration of all knowledge. This ambitious project has many debatable points especially according to the scientific arena. Even the titles of some Wilber’s books, from the perspectives of the resolution of specific issues, are provocative (“A brief History of Everything”, 1996 , “A Theory of Everything”, 2000).

With reference to a concept like “vulnerability”, thinking to apply any kind of generalization is quite difficult. Just as an example, vulnerability is hazard-dependent, so what fits with a flood can diverge from an earthquake or a landslide.

Furthermore, in the community that believes in the possibility of creating a comprehensive framework of all knowledge, Wilber’s model is not universally accepted. For one, Mc Farlane (2000) states “what is most disturbing about the four quadrant model (AQAL) is that Wilber

presents it as 'A Theory of Everything' and an integral model for the 'whole Kosmos'. In fact, the four quadrant model is not integral since it excludes very significant dimensions of reality. The effect is that a partial vision is presented as being a complete vision of the whole".

To clarify the above-mentioned problems doesn't fall into any ENSURE project's goals. Nevertheless, having filtered the vulnerability issue through the interior/exterior and individual/collective dimensions, it is worth providing some comments about the limits and the opportunities showed by the application of the 4 Q framework.

Criticism raised from partners about the 4Q tool is related mainly to two points:

1. Operability of the approach in terms of defining parameters for the assessment of different types of vulnerability;
2. Ability of the approach to catch the dynamic aspect of vulnerability.

The meaning of macro categories in which "reality", and in the case at issue, "vulnerability" is divided into, differs very much from what is meant within other more traditional approaches to the problem. At the same time, such a classification risks to include aspects that are very different from each other so that the entire method can be considered as too general or even as too abstract and, as a consequence, unable to lead to practical results.

Providing parameters and procedures for an integrated vulnerability assessment is one of the main goal of ENSURE project; thus, the question is "can the integral framework be useful to this purpose?"

There is wide agreement in the "disaster community" about the fact that vulnerability changes accordingly to spatial scale so that indicators of vulnerability at a local scale can be different from those at a regional scale. Well, as it seems, the "spatial" dimension of vulnerability doesn't emerge from the 4Q classification. A primordial shift of scale could be envisaged moving from the "individual" to the "collective" perspective but it is not enough to satisfy specific needs. Due to its nature devoted to aggregate topics under specific labels, probably the 4Q framework can only offer the possibility of providing macro-indicators that are able to answer to non specific question like "Which indicator has meaning in the understanding of individual interior?" On the contrary, ENSURE project aims at defining more detailed parameters and at giving quantitative indicators to measure vulnerability.

Another factor, greatly disregarded is "time". The 4Q framework has been perceived by some partners as a static tool that crystallize the aspects of vulnerability in four labels. In this way, it should be unable to take into account the ongoing evolution of vulnerability caused also by modifications of the boundary conditions across time. A taxonomic device such as 4Q might seem limited on an emphasis of this kind of dynamism.

To sum up, an integral framework that doesn't regard adequately to vulnerability processes depending on time and space, can't really be considered exhaustive and efficient. However, further investigations of these aspects by the integral theory practitioners, might allow to include these dimensions (time and space) in the approach.

Moreover, even if it doesn't depend on the approach, it is worth noticing the absence of some important aspects in the framework, like those referring to Na-tech events. They carry a large level of complexity due to their characteristic to be chained events (technological disasters triggered by natural events). Also in this regard, the framework can't be considered comprehensive.

Moving to a positive ground, the 4Q has been defined by partners as "an interesting way to think about a problem", especially from the "individual" and the "collective" point of views. As a taxonomic tool, it represents a starting point to carry out elaborations on linkages among different aspects of vulnerability and to understand, as an example, interactions between social and physical layers.

There is no doubt that the quadrant related to "systems" is the one with more points. It should be remembered in mind that, according to Wilber, "systems" quadrant only mirrors a single dimension that is the exterior-collective aspect of reality and that "the events in any single quadrant reverberate through each of the other quadrants" (Brown, 2005a). "Systems" should not be confused with "systemic", in that "systemic" is already an "aggregating" construct that considers the interaction among different aspects of a given phenomenon.

As a consequence, the link between LR quadrant and the others should have had the same value of any other quadrant connected with any other. This is in contrast with what has been showed in the "integral" experiences described in § 2.2 where the common major attention devoted to the "systems" quadrants was well stressed. From this perspective, the 4Q framework has achieved a significant result: a lot of arrows have been drawn from left side of the diagram to the right one, stressing how strong is the influence of psychological/interior component on the physical, organizational and material ones. This observation represents a lesson about the importance of the so-called "intangible aspects" that have to be taken into account, in a adequate manner, in every analyses of vulnerability.

At this stage of knowledge of the integral theory, even if other experiences on development purposes have shown major capabilities of the approach, this is the main usefulness of the 4Q framework recognized by partners in favour of ENSURE goals.

6 Conclusion

The 4Q framework has been filled, according to a taxonomic criterion, with both suggestions provided by partners and elements inferred from the available bibliography.

From this perspective, the 4Q scheme can be assimilated to a summary table of key factors affecting vulnerability both in an increasing and in a reducing manner.

This kind of arrangement, even if it appears divergent from well-accepted schools of thought grounding on the issue at stake, has allowed to highlight linkages connecting some immaterial aspects, as the psychological and cultural ones, with more evident aspects related to the behaviour and the physical environment.

By doing so, the 4Q framework has shown its ability in terms of tool of analysis of a given phenomenon.

Some limits of the approach have arisen, as well, in respect to the representation of the variability of vulnerability depending on time and space.

An analyses of the obtained results, seems to show that an "integral" theory addressed to the inclusion of everything, risks not to be careful of the various nature of problems and of different peculiarities existing among hazards. Moreover, it is not prone to provide operational indicators to assess and monitoring vulnerability.

Nevertheless, the core concept which the AQAL model stems from, that is a spread negligence towards the importance of interior aspects as responsible of actions and physical results, is preserved and validated. Hence, such a result can be fully taken into account in the other ENSURE project phases, in particular when the analysis of vulnerability on case studies will be carried on.

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