THE ENVIRONMENTAL DIMENSION OF THE SECURITY CONCEPT

Alexander López

Ph. D. Candidate in Political Science, at the University of Oslo (*)

ABSTRACT

The recognition of the conceptual turbulence in the field of International Relations should be the basic premise to grasp the concept of environmental security. Thus, the issue-area environmental security appears in a bifurcate world, highly interdependent as well as globalized. The integration of the environmental dimension into the security studies is a result of: First, the new type of threats, secondly due to the new subjet of reference, and finally because of the nature of the security system in the environmental field.

I- CONCEPT OF SECURITY: CONCEPTUALIZING CHANGE

Security has through history been a core concept in the studies of International Relations. The above point is understandable if we realize that the basic aim of any system is its «**SELF-PRESERVATION**». Thus, security for the states has been the basic tool to be sure of their «maintenance» in the international system. In that sense the traditional security has been based on the concept of sovereign state, which was born in the seventeenth century, as a result of the emergence in Europe of the modern state (Westphalian order). Hence, the issue of the maintenance of sovereignty has been a major element of national security. Consequently classical definitions of security are closely tied to defense of sovereign interests by military means. What does sovereignty mean?

There are two basic points that this concept encompasses: First, the idea of independence of the state in the international system. Second, the general notion of «monopoly of power», which means to establish supreme authority of a government over the territory concerned.(1)

In this connection we could also point out that whether or not the sovereignty is «**de jure**» or «**de facto**», it always involves a claim to exercise authority. Evidently security and sovereignty have been two concepts strongly linked in the classical notion of national security. In this line of thinking the following question emerges: What has normally been understood by security? First, it is proper to say that the study of International security has mostly been the domain of the realistic school. It sees the Nation-State as the center piece of the International system. Traditional approaches to national security have assumed that the principal sources of danger to welfare were other states. Perhaps one of the well-known current theorists within this traditional perspective is Barry Buzan, he stipulates the level of the state is the most relevant one. (2)

In a similar line some scholars have equated security with the perceived power of the state to defend itself from external attack. That is why the state has been the prevailing entity for guaranteeing security.

In this realist conception of security power was a central concept, and more important the monopoly of power was supposed to lie on the state. This appears to be not so anymore, due to the participation of other actors with great influence at the three levels already cited. Power was treated as the sum of a state's social, economic and military resource indicators, as compared to the indicators of other states.

In short national security is generally considered to refer to the security of a nation from being attacked by a potential enemy. (3)

(*)   ADDRESS: Department of Political Science.P.O. Box 1097 Blindern, Oslo, Norway. E-Mail alopez@Karl.uio.no.

All the above elements can be seen in the features of the national security paradigm during the postwar period. According to Elizabeth Kirk after World War II the national security revolved around the following:

A- Protection of national territories from outside attack.

B- Defending against the expanded influence of ideological enemies.

C- Development of alliances and foreign-aid structures based on the East-West power balance.

D- The use of weapon, large armies, global military presence, and security assistance as tools of foreign policy. (4)

To summarise in a realist perspective, a definition of security can be as follow: «... the sum total of the vital interests of the state (and) a vital national interest is one for which a state is willing to go to war either immediately or ultimately. Concept of national security will vary from state to state in proportion to the concept of vital interest that any given state entertains at any given time. (5)

Ultimately, National security under the realist paradigm presents threats coming from an external enemy. Besides, the subject of security is basically the state itself. Power is understood as a sum of social, economic and military sources. Therefore state and power are seen as the sum of several factors, and defense is conceived above all by military means.

It is our consideration, that nowadays there is a shift in those elements. Hence national security is a meaningless concept if it does not include the preservation of livable condition within a country. In that sense, threats are not only coming from an external enemy; internal environmental problems as well threaten the economic stability of the country. (6) Moreover, threats are not only derived from the action of other state, we must consider the role played by events both at global and at subnational levels.

The state cannot be longer the principal subject of security, due to the substantial role of the social groups and citizens in the current world. Thus, it is not only states that feel insecure; societies and social groups can experience insecurity too (Weinbaum and Kumar 1995: 149 and Buzan 1991: 5). Furthermore, power is increasingly measured not in terms of an aggregation of resources, but in terms of the ability to mitigate the factors and forces which cause insecurity. Therefore, we have to consider other actors, so the power of these actors depends on their ability to maneuver around, as well as to manipulate the structural relationship within issue-area; that is why titular sovereignty is not longer a guarantee that a state will predominate within an issue area. Finally, defense in the current world is not conceived just by military means. Defense can take another forms including technological tools, social and economic organization, and the drawing of proper public policies.

It is important to settle the question, What is the ultimate rationale of security?

In a general sense, there is no doubt that it is to grant survival to its subject. However, Who is or are its subject(s) of reference?

The answer to this question certainly help us to conceptualize the change of the nature of the security concept. Why is that? In principle because the subject of security is logically associated with what sort of threats are concerned. Thus, thinking about the nature of the fluctuation and transformation in the international system, (7) it is important to point out that the basic subject of security has been moved from the state as an omnipotent actor to the people. In that sense it is important to discuss security in relation to specific threats that the people are facing.

However, it would be dangerous to think that security as concept has a meaning independent of the state, even when the metamorphosis of the international system is going to shift the subject of security. The emergence of other important actors does not imply the eclipse of the state system. What has change is that the scope of action of the state has been severely constricted. One main reason is the emergence of new issue-area such as the environmental sphere where the state itself is limited in its capacity to generate the outcomes necessary to solve the problems, because environmental problems are global in nature.

In sum we are supporting a holistic definition of security, that means that we do not deny the importance of the state, but consider the importance of levels of analysis above and below the level of the state as being partially great. (8)

What should a new definition of security include?

What should be established at the very outset is that we will discuss only the environmental dimension of the concept of security, so we are aware that in the new world order, security has been related to another issue-area, perhaps, one of the most well known is the economic dimension. (9) The concept of economic security was applied to address themes such as the

OPEC oil crises in the 1970's. Nonetheless, it should be pointed out that in the analysis of environmental security the economic dimension is directly incorporated. It is impossible to discusses environmental security without reference to economic aspects. After all problems such as global warming, ozone depletion, food scarcity, deforestation and so on, have a multilineal web of links with economic variables.

Considering the above statement, a new definition of security has to be tied to the following questions: Security of **WHAT** and security **FOR WHOM**. The answer to both questions must take into account two factors: First, the kind of threats that we are discussing. In our research we shall consider the ones coming from environmental disruption (environmental threats). Secondly, the main subject of security (people). We shall consider security for those people inhabiting one given geographically delimited area.

A preliminary suitable definition of security in term of this new approach is as follow: «The sustainable condition in which we enjoy the right to livable habitat with dignity and without the threats of murder, domination or eviction» (Muller 1986:39). (10) The above definition is very useful as a preamble to establish a suitable approach to the concept of environmental security, for three reasons:

A- People as subject, is the core point in considering environmental security.

B- The concept of habitat as ecological, social and economic unit is as well the most suitable spatial limit, rather than the political borders.

C- This definition is «pro change,» consequently anti «status quo.» This is very important in the analysis of environmental security in the Amazon river basin.

In summary the overall picture shows that the elements related to the questions of security of what, and security for whom, define a limit in term of our analysis of the phenomenon of environmental security. So, the character of the new system reflects the new threats that the subject is facing (See figure No. 1).
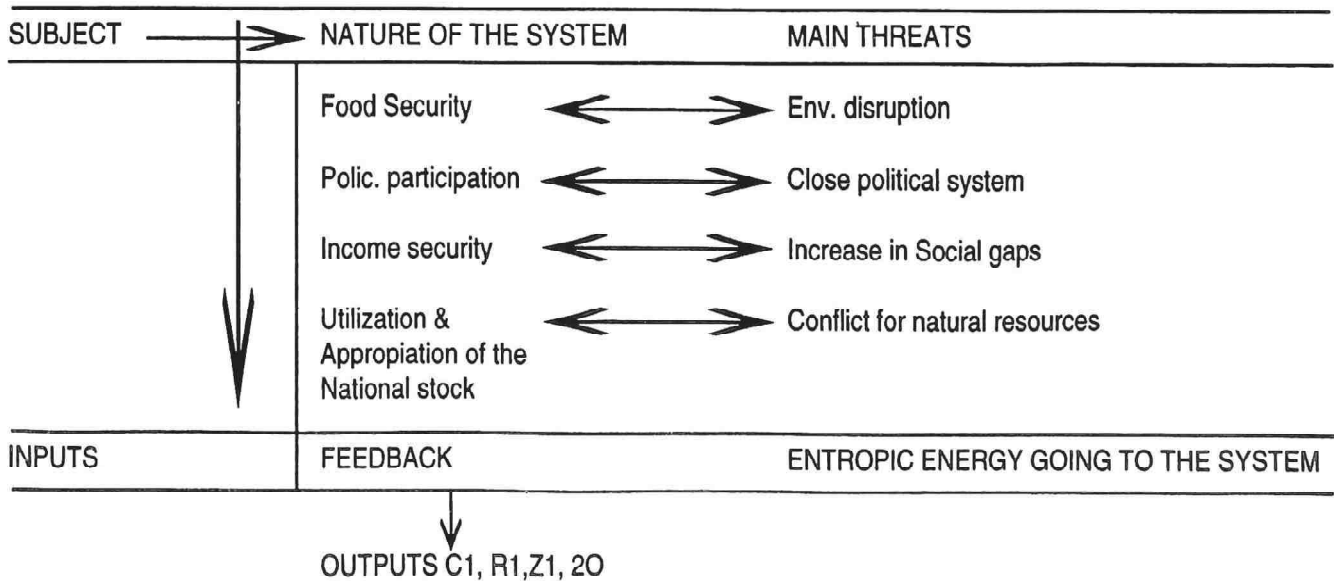
As a result of the aforementioned elements, it is difficult to integrate environmental security as concept, into conventional, and/or military security.

In the final analysis it is important to consider What are the main differences between the notions of environmental security and traditional security.

As has already been mentioned there are differences in the subject, in the nature of the system, and the kinds of threats. As corollary we have:

A- Military threats are more easily identified in terms of their origin. In contrast environmental threats are basically systemic in origin. This means that their origin results from a complex process.

B- Many environmental threats are regional and global as well, moreover long term and transboundary in terms of impact, whereas military threats are conceptualized in terms of state versus state, and mostly in the short run.

FIGURE No. 1. MODEL OF ENTROPIC INTERACTION WITHIN AN ECOLOGICAL-SOCIAL UNIT

SUBJECT	NATURE OF THE SYSTEM	MAIN THREATS
	Food Security	Env. disruption
	Polic. participation	Close political system
	Income security	Increase in Social gaps
	Utilization & Appropiation of the National stock	Conflict for natural resources
INPUTS	FEEDBACK	ENTROPIC ENERGY GOING TO THE SYSTEM

OUTPUTS C1, R1,Z1, 2O

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C- Environmental threats to security threaten the individual as much as the state itself. Whereas traditional security is concerned with the state apparatus. (11)

III- HOW DID THE ENVIRONMENTAL DIMENSION ENTRY INTO THE SECURITY STUDIES?

This part attempts to identify the origen and development of the links between environment and security studies. It provides a summary of the three schools and/or most important movements linking environment to security. First we show the arguments of the thinkers linking environment to security. Secondly we point out the military conception. Finally is presented the school denying to incorporate the environmental dimension into the security studies.

Developing a chronologically answer, we must consider as source of the current discussion the works made in the late 60's and early 70's. It should be quoted writers such as Paul Ehrlish (1968), drawing attention to the exponential population grows, Garret Hardin (1968), developing the idea of «tragedy of the commons,» Barry Commoner (1971), and his work on the negative externalities of production technologies, Danella Meadows (1972), focussing on the potential limits to industrial growth, and Lester Brown (1972), and his work on the complex global interdependencies of the late twentieth century. All these works introduced the environmental field as issue-area in many aspects of social life.

In addition we have in this period other important events which influence the issue area. For example The United Nations Conference on the Environment (1972) held in Stockholm, and the establishment of transnational forces conceived as Non-governmental organizations, for instance Friends of the Earth (1969), and Greenpeace (1972).

The turn to incorporate environment into the notion of security began with the publication of «Limits to Growths» (Meadows 1972), the thesis holds in this work stimulated concerns about how resources scarcity might jeopardize the economies of advanced industrial states and promote conflict. These factors cause to reexamine notions of national security, and above all add those involved at that time an economic dimension.

Thus, a broader definition of national security began to be conceived. So, military threats are not the only one anymore, because there are other aspects weaken the state, and threaten the standard of living of its citizens. (12)

In the 1980's, several events strengthen in an implicit way the link between environment and security, among them:

1- The publication of the report of the World commission on Environment and Development, «our common future.»

2- The realization that the rate of global change, like ozone depletion, was faster than expected.

3- The politicization of environmental issues around the world.

4- The conflict between short-term economic goal, and long term sustainable development, especially in developing countries.

5- The end of the cold war.

6- The emergence of a «global problematic» including themes of environmental degradation, trade disputes, etc.

7- the increasing interdependence created by global economic integration. (13)

All the above elements have created ecological awareness and to bring environmental concerns to the high table of priority issues, the so-called high politics. (14) Thus, we perceive a gradually changing agenda for international security studies, where the incorporation of the environmental dimension into the security concerns is a reality in the new world order. (15)

III- BUILDING THE WEB LINKING ENVIRONMENT TO SECURITY

III-1 LINKS BETWEEN ENVIRONMENT AND CONFLICT

Research seeking incorporate environmental concerns with thinking of security comes basically from the works developed by Lester Brown (1977), and Richard Ullman (1983).

In 1977 Brown wrote «The overwhelmingly military approach to national security is based on the assumption that the principal threat to security comes from other nations. However, the threats to security may now arise less from the relationship of nation to nation and more from the relationship of man to nature. (16)

Brown's position found support six years later, by Richard Ullman with a short article entitled «Redefining security.» Thus, Richard Ullman redefined a threats to national security as an action or sequence of events that:

1- Threatens drastically and over a relative span of time to degrade the quality of life for the inhabitants of a state.

2- Threatens significantly to narrow the range of policies choices available to the government of a state and too private, non governmental entities. (17)

In Brown's position we find the idea to broaden the concept of national security to include nonmilitary threats jeopardising the state as well as the quality of life of its citizens. During this period, however, the imperatives of the cold war continued to dominate security affairs.

The idea of linking environmental degradation and conflict has been developed in a more precise way recently. So, since 1984 various authors have tried to display how environmental stress is leading to conflic. (18) One of the most influential arguments has been stated by Jessica Tuchman, in her article «Redefining Security.» She points out the interplay between population growth and resource scarcity, so she conceives a negative future for humankind, due to the entropic interaction of the above elements. (19) She focuses specially on global issues as well as include the importance of resource scarcity.

A more direct relationship between population growth and conflict has been stated by Jack Goldstone in «Inminent political conflicts arising from China's environmental crisis». Here Goldstone argues that the combination of population growth and overburdened arable land has been a source of conflict in China for several hundred years. In many ways these arguments are in the line of the work made by Homer-Dixon.

Homer-Dixon is responsible for one of the most ambitious project exploring the relationship between environmental change and violent conflict. Homer-Dixon has explored the relationship through several case-studies in developing countries, under the hypothesis that in these scenarios an environmental conflict is most likely. (20) His works remain very much at the subnational level (ethnic clashes, civil strife), which is something different from the work at national level developed by Westing in 1986. (21) Both perspectives belong to the so-called environmental conflict approach, somehow one of the most important contributions of this approach is the progress made in the operationalization of the concept of environmental security. In particular the model developed by Homer-Dixon of causal chain from human activities to violent conflict.

Though Homer-Dixon explores the manifestation of conflict basically at the subnational level, he assumes a multilevel position in terms of identifying factors contributing to conflict. He lists greenhouse warming, stratospheric ozone depletion, acid deposition, deforestation, degradation of agricultural land, overuse and pollution of water supplies, and depletion of fish stocks. Moreover, he draws attention to other important aspects leading to conflict such as declining biodiversity, increase dumping of toxic waste, and perception of environmental or potential damage.

Also Robert Kaplan in an article entitled «the coming anarchy» describe a scenario of violence and conflict, related to environmental degradation. He takes example from West Africa, showing how this region is becoming the symbol of worldwide demographic environmental and societal stress. In a section entitled «The environment as a hostile power» the author focuses on the growing connection between the earth's environment and the foreign policy of nations. (22)

III-2   THE MILITARY CONCEPTION.

The military conception is related to the link between military activities and the environment. Some authors such as Finger (1991) and Pirages(1991) identify military activities and the conflicting security paradigm as significant causes of environmental degradation. Thus, for example Finger argues that the tangible and theoretical instruments of security should be excluded from playing a role in addressing environmental problems. (23)

Other authors are discussing the redefinition of military activities, in term of new functions of the military apparatus, e.g., Humanitarian missions. This dimension is called a conversion. (24) A different view from the previos one is hold by other scholars who consider that after the cold war, the disorder of the new world order still presents a multitude of threats that demand military responses. For instance the argument developed by Huntington and Dunlap (1992-93), is that the widening the scope of security undercuts the ability to conduct traditional missions that counter explicity military threats. This line of thinking still remains keeping a conflictual as well as more strictly military definition of security.

III-3   ARGUMENTS   AGAINST   LINKING ENVIRONMENT TO SECURITY

Within this category we want to present the scholar of thought unpersuaded by the arguments linking environmental degradation to security. For them national security must be kept narrowly focused on military threats. Thinkers in this position have expressed skepticism about any relationship between environmental change and traditional national security interests. (25)

A second case against linking environmental degradation to national security is based in the focus, due to the traditional focus of national security (interstate violence), has little in

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common with environmental problems. In this line of thinking they argue that environmental degradation is not very likely to cause interstate wars. One of the most well known authors in this group is Daniel Deudney who develops three basic propositions to defend his thesis. He says: Environmental degradation and violence are very different types of threats. Both... may kill people and may reduce human well-being, but not all threats to life and property are threats to security. Second, the scope of source of threats to environmental well-being and national security from violence is different. There is nothing about the problem of environmental degradation that is particularly national. Third, there is a difference between environment well-being and national security concerning differing degrees of intention involved. Violence threats involve a high degree of intentional behaviour. Environmental degradation on the other hands, is largely unintentional (Deudney 1992: 174-175).

Since a general perspective of this group expresses a preoccupation for the overlapping between environmental security and national security, they are concerned specially that this phenomenon (linking environment to security) could drive us to the preservation of the status quo and subsequently marginalize issues such as global justice and the need for fundamental institutional or systemic change.

Finally, there is a preoccupation coming from the utilization of the concept as political slogan or Bureaucratic tactic for mobilizing resources for programs that do not typically fall under the rubric of national security. In this line Conca (1994) cautios that one must distinguish among rhetorical endorsement of environmental security and value acceptance of fundamentally new conceptions of security.

Our perception is that often the disagreement about how to approach the relationship between environment and security, is due to lack of the adequate theoretical framework to deal with the relationship between environmental degradation and security. In that sense, once again our starting point, and the point here defended is that we must address security in two ways: Security of what and security for whom. That means that security must be seen in context, and its operazionalization result from an ellaborated ocurre theoretical framework as well as from the sort of answer that we give to the above questions.

As corollary we argue that the concept of environmental security requires further clarification, in many ways is still vague, and in many cases without clear conceptual delimitation. Moreover, as is point out by Dokken and Greager one of the most important «lag» with the concept of environmental security today is the lack of fruitful operationalization of its various aspects. An exception is the work undertaken in the environmental conflictual approach. (26)

III-4   LINKING ENVIRONMENT TO SECURITY

The links between environment and security have been explored in different ways as was showed in the former chapter. According to our view the most important links are:

1- Environmental disruption can be cause of international and/or internal conflict. E.g., The problem over access to water, as in the Middle East, and the violence and social unrest in the Rondonia state of Brazil.

2- Environmental disruption can be consequence of international ardor internal conflict. I.e., the Golf war in 1991, and the problem of soil erosion in El Salvador by reason of the civil war.

3- Environmental degradation may exacerbate a conflict that originated for other reasons. E.g., The case of Rwanda, or the Uttarhkand movement in the Uttar Predesh province in India.

4- The way of sharing one given natural resource can be cause of conflict. E.g., the hydroelectric project on the Brahmaputra river, and the resulting Indo-Bangladesh tension.

5- Environmental disruption can be a severe threat to the existence of certain social group. E.g., The Yanomany in the Brazilian-venezuelan border.

The above illustration represent the most important links between environment and conflict. In our analysis we will pay attention only the conflict arising from the undermining of the classical functions performance by the environment. (27) This undermining would come via degradation and/or depletion, and as condiction it must be caused by human-made. In another words we will not consider natural disaster for instance.

IV-   THE PHENOMENON OF ENVIRONMENTAL SECURITY: AN OVERVIEW OF THE CONCEPT

The item III showed the current discussion around the problem linking environment to security. It is the aim of this one to state our approach to the concept of environmental security. To do so, first we point out the four systemic ideas encompassed by the concept under evaluation. Second we display the two angles that has to be included in a holistic definition of environmental security i.e., positive and negative security.

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Finally we indicate the three dimensions of the concept, presenting as corollary our definition of environmental security.

Its is our view that there are four ideas behind the concept of environmental security, they are:

1- The minimization of risk or threats that the people are facing due to environmental degradation and/or depletion. (protection and/or avoidance).

2- The notion of effective control on one given natural resource. (28)

3- The idea of meeting the basic needs of the social groups concerned. (Maintenance structure).

4- The idea of seeking the equilibrium (Dimamic stability). (29)

The above elements contain aspect of the negative and positive dimensions of security. Negative security is related to the security from something. In other words it deals with the protection against X, Y and Z. Living in a negative security is basically to be responding to the threats faced in one given moment of time. Therefore, negative security attempts to approach the issue of security through the notion of insecurity.

Positive security concerns with the necessary conditions for well-being of people. These conditions include the basic needs that people require in order to experience security.

In our holistic interpretation of environmental security both dimensions are important, they are complementary. They represent different aspects, however they complement each other to maintain the unity of the system of security.

Environmental security in that sense it is not only the absence of violent threats to the people, moreover, it is the presence of certain social conditions that permit to meet the most elemental social aspirations of the people.

Another important fact is that definition that point out just the connection between environmental degradation and interstate conflict is unuseful in this research. Because our definition set up the environmental dimension of the concept of security below and above the state level. Our holistic definition percieves the concept as covering three levels of analysis (subnational, national and international level).

In a holistic way Patricia Mische has defined environmental security «... as the set of polarities that goes between human activities and the life-sustaining capacities of the earth» (Mische 1989:391). This is clearly a more holistic definition, that move away from competitive models of state behavior.

A realist definition of environmental security is formulated by Michel Frederick. He defines environmental security as the «absence of non-conventional threats against the environmental substractun essential to well-being of a state's population and to maintenance of its functional integrity». (30) This is a more state-centric perspective, and very much in the line of negative security (security from), because he refers basically to the absence of threats, and less to the conditions for security.

Unfortunately Homer-Dixon a leading theoretical within the conflict approach of environmental security has not provided any precise definition so far as I can see. In the conflict approach we also find the work of Lodgaard and Westing. Sverre Lodgaard defines environmental security along three dimensions:

1- Sustainable development of resources.

2- Environmental protection in the traditional narrow sense of the term, meaning clear water and air, unpolluted soil etc.

3- Minimization of risk.

We may say that Lodgaard stress in the relationship between environmental degradation and violent conflict, in twofold:

1- Environmental degradation as cause of violent conflict

2- Environmental degradation as consequence of violent conflict. In a similar way Westing implicitly define environmental security by the way of linking environmental disruption to war. (31)

Considering our holistic view, our definition of environmental security has the following features:

A- It includes features from the positive and negative security

B- It goes below and above the state level

C- It involves three dimensions: HUMAN WELFARE, SUSTAINABLE DEVELOPMENT, AND ECONOMIC DEVELOPMENT.

Taking into account the above considerations, one hast to understand that environmental security is a new notion centered upon the suitable relationship between society and natural environment. Thus we have that in our approach environmental security is not only the avoidance of threats, this is only one part, also this concept extends far beyond the level of the state, and encompass not only the natural habitat sector, but also the social and economic dimensions within a whole.

In short an optimal relationship between society and environment leads to environmental security. A basic model of relationship between the sectors participating in the construction of a process of environmental security is showed in the figure No. 2. It is indispensable to explore this relationship in order to promote a successful process of decision making in one given area.

Further development of the three dimensions of the concept of environmental security, i.e., human welfare, sustainable development, and economic development is necessary.

Concerning human welfare is proper to say that propensity for conflict is determined in many cases by social needs of the collectivities concerned. Hence we have that the growing social gaps exacerbate tension between «haves» and «have nots,» often producing situations that can be described as a «zero sum game.» Because of the above elements, for some authors the concept of EQUITY is at the core of the environmental security concept. (32)

If the social gaps are large, and increasing, there will be an increased pressure on the natural resources. On the one hand the demand exceeds the availability of the natural resources, and on the other hand the growing rate of consumption for the «powerful class» increases the waste.

In summary we know that the relationships between demand and availability, and high comsuption and capacity of the environment like assimilator of wastes, are forces that interplay (in whatever ecological unit) with great influence, leading to a situation of either environmental stability or instability.

When can one say that there is a process of environmental insecurity? Generally speaking insecurity is found when there is a disruption of the environmental functions, followed by social tension, as people are not meeting their basic aspirations and needs. Consequently latent conflict situation become manifest. By way of precision must be said that there are three classical functions which the environment performs:

FIGURE No. 2.
NEW PERCEPTION OF THE RELATIONSHIP BETWEEN SOCIETY AND ENVIRONMENT
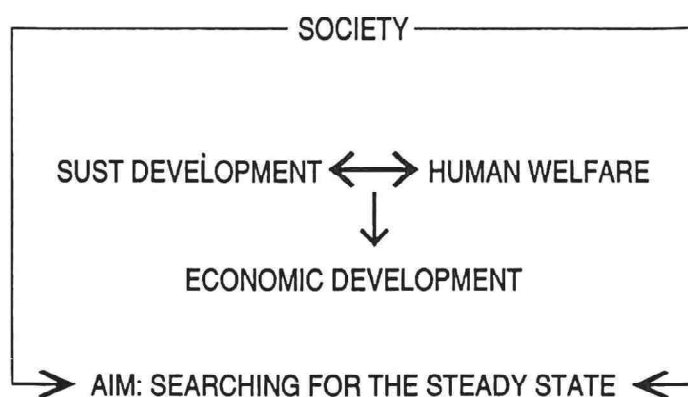
A- A source of natural resources (food, raw material, energy)

B- A source of environmental service (life support, recreation)

C- and assimilator of waste. (33)

For that reason the undermining of these functions, in most of the cases lead to social unrest, and then possibly to conflict. If this chain occurs, a process of environmental security is being experimented. This aspect of the issue leads us to the next question. What are the elements that could undermine these functions?

There are many aspects that can be cited, moreover the elements depend very much on the area that is being considered. In a very general perspective can be quoted three:

A- The unequal distribution of resources (economic as well as natural) within a society.

B- Uncontrolled population growth.

C- The unsustainable exploitation of these resources faster than they are renewed. (34)

To continue it is important to refer to the second, and third dimension which are encompassed by the concept of environmental security, i.e., sustainable development, and economic development. I prefer to separate the concept of

Sustainable Development from the concept of human welfare, because the first one does not always provide explicitly for social equality or justice, as is often assumed. Mostly the idea of sustainability is strongly linked to the non-depreciation of the natural stock. However, it is clear that some of the current literature links this concept with topics such as:

A- A fair distribution of income.

B- Improvement in health and nutrition status.

C- Access to resources.

D- Increase in basic freedom. (35)

In summary it is our intention to point out that sustainable development is a substantial dimention interpreting environmental security, as long as the idea of sustainability involves the conception of exploitation of the natural resources in a proper way. The above point because it is an impossible theorema to keep for a long period of time the stock of natural resources in the same way. Again the objective should not be simple conservation, but positive transformation. We understand for it to seek another way of equilibrium in the relationship between society and environment. Specially because simple conservation leads to maintain the status-quo. Therefore social condition remain very much in the same stage. On contrary is our idea that promoting a process of a rational utilization of the natural stocks (positive transformation) will lead to open more social and economics opportunities for the social actors. Of course some institutional mechanisms play an important role in the effectiveness of the utilization of the natural stocks.

On contrary to assume a conservasionist thesis is run against the concept that everything is connected to everything else, therefore that «everything must go somewhere else,» moreover, go against the idea that energy assumes interchangeable forms, and that this transformation entails energy degradation (first law of thermodynamics).

Finally, we state the term economic development as a substantial component of the concept of environmental security. This is important in terms of its relation with human welfare, due to its impact in alleviating poverty as well as improving the standard of living, and with the concept of sustainable development in term of the continuos feedback between the ecosystem and the economy.

We use economic development instead of economic grow, because the term sustainable development only makes sense if it is understood as development without growth. Thus, if something grow it increases in size by the addition of material through assimilation or accretion. To develop means to expand or realize the potentialities of; to bring gradually to a fuller, greater, and better state. When something grow it gets bigger, when something develops it gets different. For instance the tecnological improvement must be considered development by virtue of its nature. Thechnological improvement leads to get products in a different form, in better and safer conditions.

We must consider that the economy from our perspective is an open subsystem of the earth ecosystem, which is finite. Therefore if the economy is growing always, it will take greater proportion of the total ecosystem reaching a limit at 100 percent. Consequently, its growth is not sustainable.

All the above elements allow us to settle the most important question: What is be understood by environmental security?

We do not want to tie the concept of environmental security to the conflictual approach. It has been demonstrated that we have an insecurity situation, even when there is not a violent conflict. Added to that the manifestation of violent conflict can be delayed by the intervening variables.

In sum, even when we share the idea that environmental degradation and/or depletion can lead to violent conflict, the concept of environmental security is also referred to express how environmental disruption provokes a gradual deterioration of the quality of life and/or standard of living of people, and then to conflict, either in the way of latent conflict, manifest conflict, or violent conflict.

If we take into account all the elements that have been exposed in this document, one could define environmental security as:

A state of affairs where the management of the natural resource (X), shared by B1, C1 and D1, is carried out in proper way, keeping its classical functions in a sustainable maner, and offering social and economic opportunities, as well as decent standard of living to B1, C1 and D1. Hence, minimizing the risk of conflict among B1, C1, and D1 for the exploitation of the resource (x)

The above definition tries to incorporate the ideas of human welfare, sustainable development and economic development, as well as aspect of the positive and negative security. At the end we use the word minimizing the risk of conflict instead of avoiding conflict, in as much as the attempt to reach complete security by avoiding conflict is not only impossible, but also is unsuitable. Why is that?

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Because if one thinks in a systemic way, one must recognize that absolute security by any actor will stimulate reaction by the other actors, which raises the level of threat in proportion to the measure taken (Buzan 1983:215). (36) Consequently, the absolute security of (B), normally is traduced in the absolute insecurity of (D), that is why is unsuitable. The underlying doubt is: How much security is enough or necessary?

The first step answering that question is to know the actors envolved. As a principle actors are not equal. This means that they do not have the same power, the same dependence on the natural resources, nor the same needs. For that reason, one has to identify their interests, their main needs, and understand how they perceive each other, in order to establish how much security is needed.

In addition, it is important to know the behavioral aspects, objects of contention, predisposition to conflict, and possible political alliance among the contenders. In addition these components are substantial to determine the degree of security not only suitable for the parties to conflict, but also the degree of minimum security that each party considers reasonable.

The underlying conclusion of this analysis is that security of B1 cannot be discussed without reference to the security of C1 and D1 as well, as we pointed out in the preliminary definition of environmental security.

CONCLUSION

We would like to conclude this article with a final query.

Why will environmental security have such a profound impact on national, and international politics as well?

Everything that has already been said shows the new sort of bifurcation that we are facing. Environmental insecurity is a new phenomenon that goes further than national scope, it shows the fundamental change in the nature of threats to human beings, and in the relationship between states. Also this concept involves a redefinition of the most important concepts in International Relations, and suggests a new philosophical conception of life; a new way to see the society interacting with the natural environment, just like a system, just like a whole.

To conclude we summarize our discussion as follows:

1- In term of levels of analysis, the concept of environmental security goes beyond the traditional paradigm of national security.

2- Environmental security involves the participation of new actors with potentially great influence on the international agenda, such as Intergovernmental organizations, Non-governmental organizations, social groups, and public opinion.

3- Environmental security cannot be achieved for actors functioning separately, they are compelled to see each other within a whole, hence interdependent.

4- The classical notion of political boundaries is replaced for the idea of ecological unity.

5- The above idea compels the states to understand their relationship in terms of variable sum game, rather than a zero sum game.

6- There is a clear redefinition of the link between economic development, environmental quality, and social requirement, due to the features of the concept of environmental security.

7- The classical notions of sovereignty and national interest must be supplemented by one of ecological interdependence (reciprocity), and common interest (joint management).

8- The environmental security, can be reached when the system under study experiments a steady state. Therefore, it does not mean «status quo,» and is in this sense, a dynamic pro-change concept.

9- Environmental security itself, involves a new impulse for international cooperation, due to the fact that it cannot be achieved unilaterally. The explanation is found in the nature of the threats; they are regional and global in essence.

10- Environmental security is a process of hig complexitiy, in which the utilization of the principle of hierarchy aspires to be moderate, even when it is important.

11. With the new process some concepts such as equity, justice, popular participation, development, environmental quality, carrying capacity, common resources and sustainability have an important role. Thus its operationalization involves a new kind of «social revolution,» in terms of a new way to conceive the relationship between society and the natural environment.

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BIBLIOGRAPHICAL NOTES

(1) Some authors refer to internal and external sovereignty, the first to refers to the distribution of power within the state, and the second is related to the state's role within the international system.

(2) To quote Buzan: States are the principal referent object of security because they are the framework of order and highest source of governing authority.

(3) WESTING (Arthur) .» Global resources and international conflict». 198 . p 192.

(4) Kirk, Elizabeth «The greening of security: Environmental dimensions of national, international, and global security after the cold war.» In Perspective for a changing world order. Edited by Eric Arnett. 1991, November.

(5) HURTMAN, Frederick. «The Relation of Nation». New York, 1967, p 14.

(6) There are some environmental problem that can be called national in term of its formal manifestation in one specific region. However, we are aware of the strong global links of most of the environmental problems. So, we support the thesis that border are becoming increasingly porous in term of environmental threats.

(7) Concerning this transformation, there are two basic features: First the steadily interdependence among the actors with influence on environmental policy. For this reason it is important to be aware that environmental security can not be achieved unilaterally. The second feature could be called the globalization of the environmental problems, because is very well known that the environmental consequences transcend the national boundaries of the state.

(8) Some authors such as Mathews (1989), Mische (1989,1992), Remner (1989), Prins (1990) and Myers (1993) have contributed from different approaches to develop a more holistic conception of the security concept.

(9) For instance see the work «Energy, Minerals, and Western Security», by Hans W, Maull. Johns Hopkins University, 1984.

(10) MULLER (Harald) .» Security and the Environment Exploring Some Key Issues of our Times» 1986. Oslo, Norway. p 39.

(11) Some references about the arguments over the differences between traditional security and environmental security are available in: Daniel Deudney «The case against linking environmental degradation and national security. « Millennium. Vol 19 1990. Ian Rowlands «The security challenges of global environmental change.» The Washington Quarterly. Winter. 1991. and Paul Sansom. «Environmental security in the post-cold war Artic. « Draft prepared for the conference military development and socio-cultural change in the Artic. 1993.

(12) It is important to note that before the threats to security were conceive exclusively at the state level.

(13) To see the implications of the current interdependence see Robert O Keohane, and Joseph S Nye, 1987. «Power and interdependence». International Organization, vol. 41, no 4 Autumn, pp 725-753.

(14) In our perspective an issue can be considered high politics as long as its evolution is sensitive to the state and its citizens,

consequently is likely produce change in the structure of the system being studied.

(15) Some of the latest (1994-95) works including environment as a new dimension of security are: Brown, Michael E., Sean M. Lynn-Jones, and Steven E.Miller eds.»The Perfil of Anarchy: Contemporary Realism and International Security». Boston MIT Press, 1995.Del Rosso, Stephen J.. «the Insecure State: Reflections on the State and Security in a changing world» Daedalus 124:2 April 1995: 175-207. Romm, Joseph.» Defining National Security: The Non-Military Aspects». New York, 1993. Shuman, Michael H., and Hal Harvey «Security Without War: A Post-Cold War foreign policy». Boulder Westview Press, 1994.

(16) Lester R. Broun, «Redefining security», Worldwatch paper 14, Worldwatch Institute, October 1977, P 6.

(17) Richard H. Ullman (1983) «Redefining security.» International security 8 (summer), p 133.

(18) Among the works developed in this line are: Earthscan(1984), Timberlake and Tinker (1985), Gurr (1985), westing (1986), Myers (1987), Molvaer (1991), Libiszewsk (1992), Boge (1992), Gleick (1993), Kumar (1993), Saviano (1994), Homer-Dixon (1991,1993,1994).

(19) The problem regarding population growth was showed previously in 1968 by Paul Ehrlish. Later in 1990 he again writes with Anne Ehrlich a new work called «The Population explosion».

(20) His case studies include: Envinronmental scarcity and violent conflict: The case of Rwanda, Chiapas, Pakistán, and South Africa.

(21) By national level we mean the interstate conflict dimension. Arthur Westing identifies 12 conflicts in the twentieth century that he maintains did contain distinct resource as components.

(22) This article appears in The Atlantic Monthly February 1994: 45-76. An argument against this position is hold by Alexander Cockburn, he called kaplan's thesis catastrophic impressionism.

(23) Finger, Mathias. 19991. «The military, the nation state and the environment.» the ecologist, 21 : 220-225.

(24) For a discussion of conversion and the environment see Nils Petter gleditsh and Reidulf Molvear. Proceeding of a seminar in Perm, Russia, 24-27 November 1991, PRIO Report, No. 2, 1992.

(25) See the works by Simon, Julian. 1989. «Staying alive: Women, Ecology and Development.London. Zed books. Walt Stephen, 1991. «The Renaissance of Security Studies» In International studies Quarterly. 35: 211-239. And Gray C. Boyden and David B. Riukin, 1991. «A no Regrets Environmental Policy.» In Foreign Policy, 83: 47-65.

(26) Dokken, Karin & Groger Nina 1995. «The concept of Environmental Security-Political Slogan or Analytical Tool?» PRIO Report 2, 1995.

(27) The classical functions are: 1- A source of natural resources 2- Source of environmental service 3- An Assimilator of Waste.

(28) This idea implies the real access of certain social groups to the exploitation of the natural resources indispensable for their existence. However, the term «effective control» does not exclude the idea of the social function that one natural area can

performance. For instance the extractive reserves in the Amazon basin.

(29)   The idea of dynamic stability is also called steady state, which is when opposing or different variables in a system are in balance, of course this is not a static state, that is why we do not hold the idea of supreme the total insecurity, but rather minimize it.

(30)   Cited by Richard Mattew. «Environmental security: Demystifying the Concept, Clarifying the Stakes». In the Woodrow Wilson center`s environmental change and security project. Report, spring, 1995.

(31)   Implicitly, because there is not explicit definition of environmental security in his work. The relevant aspect is his classification of three types of resources over which wars might be waged. 1- territorial resources within a nation 2- Shared on international resources which do not respect boundaries 3- Extra territorial resources which are part of the international commons.

(32)   To this respect is useful to review the exposition made in the report «Environmental Security». A report contributing to the concept of comprehensive international security. PRIO-UNEP,1989.

(33)   BOJO Jan, KARL Goran, UNEMO Lena. «Environmental and Development: And Economic Approach.» Kiwer Academic publishers, 1990. p 19.

(34)   HOMER-DIXON Thomas. «Environmental Change and Violent Conflict». Scientific American, February 1993.

(35)   In that sense is useful to review the book: «Sustainable Development: Economic and Environment in the Third World». By David Pearce, Edward Barbier and Anil Markandya. London, 1990, p 2.

(36)   BUZAN, Barry «People, State and Fear». Wheatsheaf Books Ltd, Great Britain. 1983, p 215.