

**Citation:**

Muñoz, Lucio, 2002. “**Maximization, Partial Regulation, and System Dominance: Can They Be Drivers of True Sustainability?**”, In: *International Journal on Environmental Management and Health*, Walter Leal Filho, PhD(Ed), Vol. 15, No. 5, Pp. 545-552, MCB University Press, Germany/Sweden

---

**Maximization, Partial Regulation, And System dominance: Can They Be Drivers Of True Sustainability?**

By

**Lucio Munoz**

**Abstract**

Three of the fundamental aspects under which current development programs operate are self-interest-based plans, compartmentalized regulatory environments, and unbalanced competition. These forces are important components of traditional sustainable development frameworks as they allow for processes based on maximization, partial regulation, and system dominance. It is pointed out in this paper, using qualitative comparative means, that these forces are drivers of sustained development, but not of true sustainability. And the reason is that under true sustainability, there is no maximization; there is no partial regulation; and there are no dominated systems.

**Introduction**

The promotion of sustained development frameworks as if they were sustainability is, and for sure it will be, contra-productive. Assuming that this promotion of non-sustainability approaches is done due to the lack of clarity on what the differences between these two types of systems are, then there is a real need to formally advance such a clarification. In order to point out the conditions under which sustained systems work, a general review of the sustainability implications of individual self-interest planning, of compartmentalized regulation, and of unbalanced competition is presented.

**Self-interest based planning**

Whether at the individual level or at the country level, self-interest means putting your-self first in all instances so that you can maximize your development goals. In the case of economics, self-interest based economic behavior is at the core of its philosophy(Davidson and Davidson 1996) or its framework of analysis(Jacobs et al 1998). Self-interest based planning is behind the efforts of developed countries to get more trade concessions from less developed countries; behind the efforts of developing countries to get more protection from trade rules; behind the efforts of free trade and protectionist advocates to ensure that their development views persist in today's world order; and therefore behind the creation of global institutions such as GATT and the WTO to help regulate those interactions. For example, the General Agreement on Tariffs and Trade(GATT) was created in 1948

to provides the rules necessary to support a trade process based on most favored nation, national, and consensus based treatment, and this process later evolved to the creation of the World Trade Organization(WTO) in 1993 to take over the GATT role and to govern trade(Aaronson 2001).

Hence there is a mix of plans, rules, and agreements intended to maximize best-interest trade behavior. However, maximization under a closed system means that the maximum you can get is what still is not yours within your system. This implies that an individual is capable to induce poverty/scarcity within its own system. And selfish individuals may deteriorate and even destroy closed systems without any concern about others, and even sometimes, themselves. Maximization under an opened system means that you can get still more either from your own system or from your neighbor system. This implies that an individual can induce poverty/scarcity in his system only or in his neighbor system only or in both systems at the same time. Open systems under these conditions may allow selfish maximization forces to last a little longer, but eventually, open system will deteriorate or breakdown or merge. For example, under conflicting goals and exploitative conditions, smaller open systems will breakdown or deteriorate faster than big ones. However, under compatible goals and exploitative conditions, small or big systems will merge if there are win-win options available. In both cases above, we need passive individuals in our own system or in our neighbor system for maximization to work, as we can not maximize the goals of all individuals within these two systems at the same time. It is known that as few individuals gain access and control to available resources unsustainability ensue.

### **Compartmentalized regulation**

Whether at the individual or at the country level, the regulatory environment is either partial and/or non-enforceable. Partial means either based on voluntary compliance or inconsistent with the required incentives. Non-enforceable means that regulation is bound by corruption or non-threatening penalties. National and international regulation is not full and binding because too much regulation is thought to lead to market inefficiencies or failures. It is the view of this author that institutions like WTO are aimed at simply making partial regulation cost-effective locally and globally to maximize the movement of goods and services by minimizing regulation and its negative impacts on trade and by making the agreed regulation binding. However, the level of formality and enforceability of the WTO rules created may work for the benefits of some while working against the best interest of others, which justifies calls from those less fortunate for initial or permanent protection from specific rules to be able to compete. For example, the need for protecting developing countries from specific trade rules led to the so called positive agenda focused on formalizing and enforcing rules that favors developing countries(UNCTAD 2000) and developing countries are also seeking some forms of protection under the General Agreement on Trade and Services(GATS) even in cases of fairly traded goods and services (Sinclair 2000).

Moreover, the issues related to compartmentalized regulations mentioned above get more important when dealing with dominant individual-dominated individual system or dominant system-dominated system interactions as partial regulation may lead to comparative advantages or to real and perceived dumping behavior. For example, partial regulation in developing countries allow them to produce goods without fully accounting for environmental costs; and the sale of these goods in the north could be considered by developed countries as a type of environmental dumping, which may lead to the application of antidumping laws.

Dumping behavior increases or is expected to increase as market openness increases(Mastel

1998). Under partial regulation and a closed system, individuals will continue to pollute as long as the profit of continue pollution is more than the cost of full compliance, leading to what this author calls the trash and stay syndrome. For example, as long as polluting industries can make a reasonable profit after full pollution compliance at home, they still consider their own system as sweet home. Under partial regulation and an opened system, individuals facing tougher regulations in their own system will move to their neighbor system to continue with the forbidden activities at home, leading to what this author considers to be the trash and keep syndrome. For example, since partial regulation in developing countries is still worse than that in developed countries, polluting activities that are not allowed or that become too expensive to be carried out there will move to developing countries, but they will still keep their home addresses to facilitate their operations abroad. Goldfrank et al(1999) points out that this pollution dumping process from developed countries to developing ones takes place, but it is a short-term answer to their environmental problems, not a long-term one. Notice that the absence of full binding regulation within systems and between system is another source of unsustainability.

### **Unbalanced competition**

All components of development such as free trade, globalization, regionalization, or localization are designed and implemented within an environment characterized by unbalanced competition. This means that strong and weak individual or developed and developing countries are competing for the same selfish development goals knowing in advance that the one best fit will succeed. Unbalanced competition implies system dominance, and under system dominance with no optimization plans the weak is always most likely to lose. For example, under equal environmental restrictions, dominated systems are more likely to be the losers for at least two reasons. One is that they can not afford full environmental cost internalization at par with developed countries under current development conditions; and second, they would lose many if not all of their comparative advantages, including any preferable trade status they may have on environmental and/or poverty grounds. On the other hand, unbalanced competition may increase the chances that dominant components or specific corporate interests will use antidumping laws as protectionist tools. For example, Hindley and Messerlin (1996) point out that antidumping laws can easily degenerate into protectionism under specific circumstances, including when domestic producers want to restrict the entry of competing imports. Moreover, protectionist agents in dominant systems may find it desirable to claim that social, economic, and environmental underdevelopment leads to unfair international competition. Kerr (2001) mentions that interest groups in developed countries are interested in making environmental and social/labour underdevelopment key competition issues, even in WTO forums, in order to seek the achievement of their economic and environmental protectionist goals.

Finally, unbalanced competition, the need to minimize costs, and the fear of dominated components to be left out of the development process may lead to short or long-term internal processes seeking the lowest social and economic standards possible under closed systems and to short or long-term external processes seeking the same under open systems. While systematic empirical evidence supporting race to the bottom arguments is hard to find, there is a strong theoretical rationale for them to take place(Spar and Yofie 2000), especially when internal/ external dominant groups interact with their dominated counterparts. Notice that system dominance is another source of unsustainability.

### **Sustainability challenges**

Therefore, there are three types of sustainability issues surrounding the structure of sustained systems: self-interest planning, partial regulation, and system dominance. Below, a framework designed to portrait directly the implication of these sources of unsustainability on specific types of development processes is presented.

### **Goal of this paper**

The main goal of this paper is to present a dominant-dominated qualitative development framework that can be used to point out that maximization, self-interest, and partial regulation processes are relevant for sustained development systems only, but not for truly sustainable ones.

### **Methodology**

A general development model is defined to derive eight possible development paradigms. Then, three specific development paradigms are analyzed under closed and opened system assumptions to point out the sustainability implications, on each of them, when maximization, self-interest, and partial regulation concerns are considered. Finally, some conclusions are provided.

### **Terminology**

**The qualitative comparative terminology used in this paper is the following:**

#### **Table 1 Terminology used**

-----

D = dominant development is present

d = dominant development is absent

S = dominant society

s = dominated society

E = dominant economy

e = dominated economy

N = dominant environment

n = dominated environment

-----

### **The variability of development paradigms**

Based on the notion of dominance, development models(D) vary depending of which components of the system are in dominant form, which is stated as follows:

$$1) D = S + E + N$$

The model above(D) indicates that there can be several types of dominant development systems depending on whether the social component(S), or the economic component(E) or the environmental component(N) or any combinations of them is in dominant form. The following 8 different paradigms can be derived:

-----

<b>D1 = Sen</b>	<b>D2 = sEn</b>	<b>D3 = seN</b>	<b>D4 = SE<sub>n</sub></b>
<b>D5= SeN</b>	<b>D6 = sEN</b>	<b>D7 = SEN</b>	<b>D8 = sen</b>

-----

Each of the models presented above has its unique characteristics when looked in isolation, and they may have some similarities and differences with other models when analyzed in combinations or sets. For example, in model D1 the only dominant component of the system is society(S) and therefore, achieving social goals(S) at the expense of the economy and the environment (en) is the central premise. Model D1 and model D4 have similar socio-environmental structure(S<sub>n</sub>), but different economic dominance. Notice that model D8 = sen is a chaotic one as there is no clear dominance, no clear regulatory environment, and no clear self-interest at the same time. Model D7 = SEN, on the other hand, can be considered a prototype of true sustainability as each component of the system has clear dominance, clear regulations, and clear cooperative interest at the same time. All models from D1 to D6 are sustained systems as at least one component of the system is in dominated or passive form. For demonstration purposes below, model D2, D6 and D7 are used to show how maximization, self-interest, and partial regulation affects the working of sustained and truly sustainable systems.

**Sustainability concerns under closed systems**

Analyzing paradigms under closed system conditions means studying them in isolation or without external interactions. Then, under closed conditions, model D2 = sEn has the following characteristics: partial social and environmental regulations(sn); dominant economic system(E); and the self-interest of economic agents is the rule. As long as social agents and environmental agents are in dominated form, economic goals alone will always be the norm. This is because as long as we assume that socio-environmental externalities are not of concern, economic development will prevail. On the other hand, under closed conditions, model D6 = sEN has the following characteristics: partial social regulations(s); dominant eco-economic system(EN); and the self-interest of economic agents or of environmental agents or of both of them at the same time is the rule. As long as social agents are in dominated form, eco-economic goals alone will always determine the development process. This is because as long as we assume that eco-economic development can take place without having to meet social concerns, it will persist. Notice that both systems D2 and D6 could reach a severed degradation point or a breaking point, if the dominated components of the closed system are overused or exhausted. And notice that in both systems D2 and D6 the possibility exist that dominant components can use processes that can induce dominated ones to move toward internal races to the bottom.

### **True sustainability under closed systems**

Model D7= SEN has the three characteristics of true sustainability, which are: no dominated systems; no possibilities for maximization; and no partial regulation. In other words, under model D7, all components of the system are in dominant form; optimization is the rule, and the inclusion of everybody's concerns in the set of rules induces effective cooperation. Notice that under true sustainability there are no internal races to the bottom.

### **Sustainability concerns under opened systems**

Analyzing paradigms under opened system considerations means studying them in sets or in combinations to appreciate both internal and external interactions. If we look at models D2 and D6 as an opened set, we get the following:

$$2) D2 * D6 = [(sEn).(sEN)]$$

The above formula implies that opened development can be viewed as the one resulting from the interaction of different paradigms of development subjected to different external interacting conditions ranging from selective barriers to no barriers at all.

If there are development barriers regulating the interaction of the two paradigms in formula 2, then it can be said that model D2 has a comparative advantage over model D6 as it has partial environmental regulations. It is known that when environmental costs are taken into consideration, the ability of companies or countries to compete is affected. If a country does not account for environmental externalities it can have a comparative advantage in production over those that do, and this, as pointed in the introduction, could be considered production based environmental dumping. However, this situation provides an incentive to economic agents in D6 to move polluting activities to D2 leading to a win-lose environmental situation. This can be better appreciated by factoring out common factors in paradigms D2 and D6 as shown in formula below:

$$3) D2 * D6 = [ (sE)n.(sE)(N) ] = [ sE(nN) ]$$

The above formula implies that given the same socio-economic structure(sE), polluting activities will move from places where environmental concerns are dominant(N) to places where environmental concerns are dominated(n). In other words, partial regulation in D2 leads to an unsustainable situation. This situation leads to a win-lose process where the fly of polluting activities from D6 to D2 is a win for D6, but a loss for D2, which is the same situation described in the trash and keep syndrome mentioned in the introduction, and which can be considered as pollution dumping from dominant systems to the dominated ones. Notice that the possibility of races to the bottom on environmental terms exist in formula 3 as the environment in system D2 is subjected to partial regulation.

If there are no development barriers at all regulating the interaction of the two paradigms in formula 2 or 3, then it should be expected that the initial comparative advantage seen in D2 will be eroded as the trash and keep syndrome is maximized specially if later economic agents in D2 are made accountable for the new levels of environmental degradation through charges of environmental dumping. Notice that formula 3 indicates that across paradigms, economic goals are dominant (fully regulated); social goals are dominated (partially regulated); and environmental goals are in inverse form (regulated opposite).

Also see that, if the dominated components of the open system are overused and exhausted, the system can also deteriorate or breakdown. Moreover, notice also that the only way to induce win-win environmental action in formulas 2 and 3 above is if we induce environmental dominance in paradigm D2. It appears that this is the reason why dominant environmental systems based in developed countries are focusing more their attention in the partially regulated environmental systems of developing countries. Under win-win situations and fully opened systems, we should expect the dominant component of opposite situations to prevail while similarities remain unchanged. If we apply this win-win merging rule to formula 3, we get the following:

$$4) D2 * D6 = [(sE)(nN)] \rightarrow sEN$$

The above formula implies that when there are win-win choices, then common structure(sE) and dominant systems(N) will prevail. Again, notice that in this prevailing merged system, if social agents(s) are overused or exhausted, the system may breakdown or degrade due to conflict. Again, notice that in formula 4 the possibility exists that the dominant components of the system may race the dominated social component to the bare bottom under open systems.

### True sustainability under opened systems

Under opened systems, over all true sustainability will persist only if the set of interacting paradigms display true sustainability. For example, if we assume that we have a true sustainability situation in country "i"(D7i) and a true sustainability situation in country "j"(D7j), then we can have over all true sustainability as shown below:

$$5) D7i * D7j = SEN.SEN = SEN$$

As highlighted above, under true sustainability, maximization forces, compartmentalization forces, and self-interest forces disappear. In other words, even under open systems race to the bottom are not possible under true sustainability.

On the other hand, if we have a country with true sustainability(D7) and a country with a sustained structure or with false sustainability such as D2 or D6, then we generate a situation where overall sustained development prevails, as stated in the two examples below:

$$6) D7 * D2 = SEN.sEn = (Ss)E(Nn)$$

$$7) D7 * D6 = SEN.sEN = (Ss)(EN)$$

Notice that in formula 6, overall sustained development has two sources of unsustainability, social(Ss) and environmental(Nn) and two possible candidates for races to the bottom. However, in formula 7, the resulting overall sustained system has only social unsustainabilities(Ss) and only one possible candidate to race to the bottom.

### Conclusions

It was shown above that maximization, partial regulation, and system dominance are sources of unsustainability in both closed and opened sustained systems and that they disappear when we are dealing with closed and opened true sustainability. Hence, the main forces of true

sustainability are optimization, full regulation, and cooperation. The above discussion implies that under true sustainability, there is no room for unbalanced competition, for compartmentalized regulation, and for self-interest based planning; and therefore, there is no room for races to the bottom.

## References

Aaronson, Susan Ariel, 2001. *Taking Trade to the Streets: The Lost of History of Public Efforts to Shape Globalization*, Ann Arbor/The University of Michigan Press, USA.

Davidson, Greg and Paul Davidson, 1996. *Economics for a Civilized Society*, Macmillan, London.

Goldfrank, Walter L., David Goodman, and Andrew Szasz, 1999. *Ecology and the World-System*, Greenwood Press, Westport, CT.

Hindley, Brian and Patrick A. Messerlin, 1996. *Antidumping Industrial Policy: Legalized Protectionism in the WTO and What to Do About it*, The AEI Press, Washington, D.C.

Jacobs, Donald P., Ehud Kalai, and Morton I. Kamien, 1998. *Frontiers of Research in Economic Theory*, Cambridge University Press, UK.

Kerr, William A., 2001. **The World Trade Organization and the Environment**, In: *Globalization and Agricultural Trade Policy*, Hans J. Michelmann, James Rude, Jack Stabler, and Gary Storey (Eds), Lynne Rienner Publishers, Boulder/London.

Mastel, Greg, 1998. *Antidumping Laws and the U.S. Economy*, M.E. Sharp, New York, USA.

Sinclair, Scott, 2000. *GATS: How the World Trade Organization's new "Services" Negotiations Threaten Democracy*, Canadian Centre for Policy Alternatives, Ottawa, Ontario, Canada.

Spar, Debora L. and David B. Yofie, 2000. **A Race to the Bottom or Governance from the Top**, In: *Coping with Globalization*, Aseem Prakash and Jeffrey A. Hart (Eds.), Routledge, New York, USA.

United Nations Conference on Trade and Development (UNCTAD), 2000. *A Positive Agenda for Developing Countries: Issues for Future Trade Negotiations*, United Nations, New York, USA.

-----

## **Citation:**

Muñoz, Lucio, 2002. **“Maximization, Partial Regulation, and System Dominance: Can They Be Drivers of True Sustainability?”**, In: *International Journal on Environmental Management and Health*, Walter Leal Filho, PhD(Ed), Vol. 15, No. 5, Pp. 545-552, MCB University Press, Germany/Sweden