**Citation:**

Muñoz, Lucio, 2025. **Sustainability Thought 199: Green markets or dwarf green market solutions: Pointing out the second major blunder in terms of development thinking and critical environmental problems solving,** In: ***Advances in Social Science and Management (ASSM)***, Vol. 3, Issue 03, Pp. 31-46, UK. https://doi.org/10.63002/assm.303.937

---

# Sustainability Thought 199: Green markets or dwarf green market solutions: Pointing out the second major blunder in terms of development thinking and critical environmental problems solving

**By**

**Lucio Muñoz***

*** Independent Qualitative Comparative Researcher / Consultant, Vancouver, BC, Canada Email: munoz@interchange.ubc.ca**

## Abstract

The socio-environmental consequences created by the socio-environmentally distorted traditional market thinking since 1776 when the world endorsed and promoted Adam Smith's ideas and dealing with them has led according to this author to three clear major development thinking blunders while the distortion problem remains active, one after the other: 1) First in 1987, the Brundtland Commission had a choice, to recommend a fix through sustainability market based solutions or to recommend a patch through sustainable development solutions to the critical socio-environmental problem created by the distorted market they were dealing with; and they chose a patch; 2) In 2012 Rio + 20, the Brundtland Commission on Sustainable Development had a choice, to implement an environmental fix through green market-based solutions or to recommend a patch through dwarf green market-based solutions to the critical environmental problem they were addressing created by distorted traditional market pricing; and they chose a patch; and 3) In 2023 the world had again a choice, to finally internalize socio-environmental externalities to fix the pollution production problem embedded in the linear traditional market and make it circular or to move from traditional linear pollution production markets to traditional circular pollution production markets assuming again socio-environmental price distortion neutrality, and hence, leaving the root cause of the pollution generation problem embedded in both linear and circular pollution production markets untouched; and they chose to go circular economy thinking as a pretend patch. Notice that the Brundtland Commission in 1987 found a socio-environmental pollution production problem associated with working of the traditional market, not an inefficient use of resources problem, and that the United Nations Commission on Sustainable development as well documented in 2012 an environmental pollution production problem associated with the traditional market, not an inefficient use of environmental resources, therefore, none of them found that the problem generating pollution embedded in the traditional market was an inefficient use of resources. Hence, all those development choices made since 1987 are all considered development thinking blunders because

all those choices made to address critical sustainability problems violate the theory-practice consistency principle as they do not match the nature of the problem and as well as they violate the expectations of the Thomas Kuhn's scientific paradigm evolution loop under academic integrity. This paper focuses on the second development thinking blunder, the choosing of dwarf green markets solutions over green markets solutions in 2012 to address a critical environmental sustainability problem.

## Key concepts

Sustainability, sustainable development, sustainability gap, traditional market, sustainability problem, sustainable development problem, theory-practice consistency principle, social sustainability problem, environmental sustainability problem, socio-environmental sustainability problem, paradigm fix, paradigm patch, linear traditional market, circular traditional market, pollution production market, pollution management market.

## Introduction

### a) Recent development thinking blunders

It can be said that dealing with the socio-environmental consequences created by the socio-environmentally distorted traditional market thinking since 1776 when the world endorsed and promoted Adam Smith's ideas (Smith, 1776) there have been according to this author three clear major development thinking blunders when trying to deal with those market distortions while the distortion problem remains active, one after the other: 1) First in 1987, the Brundtland Commission had a choice, to recommend a fix through sustainability market based solutions such as a full sustainability fix (Muñoz 2020) or to recommend a patch through sustainable development solutions to the critical socio-environmental problem created by the distorted market they were dealing with; and they chose a patch a la sustainable development(WCED 1987; Trzyna 1995; UN 2001; UN 2007); 2) In 2012 Rio + 20, the United Nations Commission on Sustainable Development (UNCSD) had a choice, to implement an environmental fix through green market-based solutions and thinking (Muñoz 2016); ) or to recommend a patch through dwarf green market-based solutions to the critical environmental problem they were addressing created by distorted traditional market pricing; and they chose a patch despite indicating otherwise (UNCSD 2012a; UNCSD 2012b); and 3) In 2023 the world had again a choice, to finally internalize socio-environmental externalities to fix the pollution production problem embedded in the linear traditional market and make it circular or to move from traditional linear pollution production markets to traditional circular pollution production markets assuming again socio-environmental price distortion neutrality, and hence, leaving the root cause of the pollution generation problem embedded in both linear and circular pollution production markets untouched (Muñoz 2024a); and they chose to go circular economy thinking as a pretend patch (OECD 2018; WB 2022; EEA 2023; OECD 2024; OECD 2025).

Notice that the Brundtland Commission in 1987 (WCED 1987) found a socio-environmental pollution production problem associated with working of the traditional market, not an inefficient use of resources; and see that the United Nations Commission on Sustainable development (UNCSD 2012a; UNCSD 2012b) as well documented in 2012 an environmental pollution production problem associated with the traditional market, not an inefficient use of resources, and therefore, none of them found that the problem generating pollution embedded in the traditional market was an inefficient use of resources. Hence, the chosen development recommendations mentioned above made starting in 1987, going sustainable development, going dwarf green markets, and going circular economy thinking, they are all considered development thinking blunders because all those development choices made to address critical sustainability problems violate the theory-practice consistency principle (Muñoz 2009) as they do not match the nature of the problem and as well as they violate the expectations of the Thomas Kuhn's paradigm evolution loop under academic integrity (Muñoz 2022) as they do not fully remove the abnormalities creating the sustainability problem. Aspects of the first development thinking blunder, the choosing of sustainable development over sustainability to address a socio-environmental sustainability problem has been recently shared (Muñoz 2025).

**b) The green market or dwarf green market blunder**

This paper focuses on the second development thinking blunder, the choosing of dwarf green market solutions over green market-based solutions in and since 2012 (UNCSD 2012a; UNCSD 2012b) to address the same critical environmental sustainability problem the Brundtland commission (WCED 1987) tried to solve in 1987 using environmentally friendly sustainable development thinking: The situation the United Nations Commission on Sustainable Development was facing in 2012 is summarized Figure 1 below in terms of green markets (GM), dwarf green markets (DGM), and traditional market (TM) paradigm dynamics and the resulting green market paradigm shift avoidance period from 2012 to 2022 to now, an idea recently shared (Muñoz 2024b):

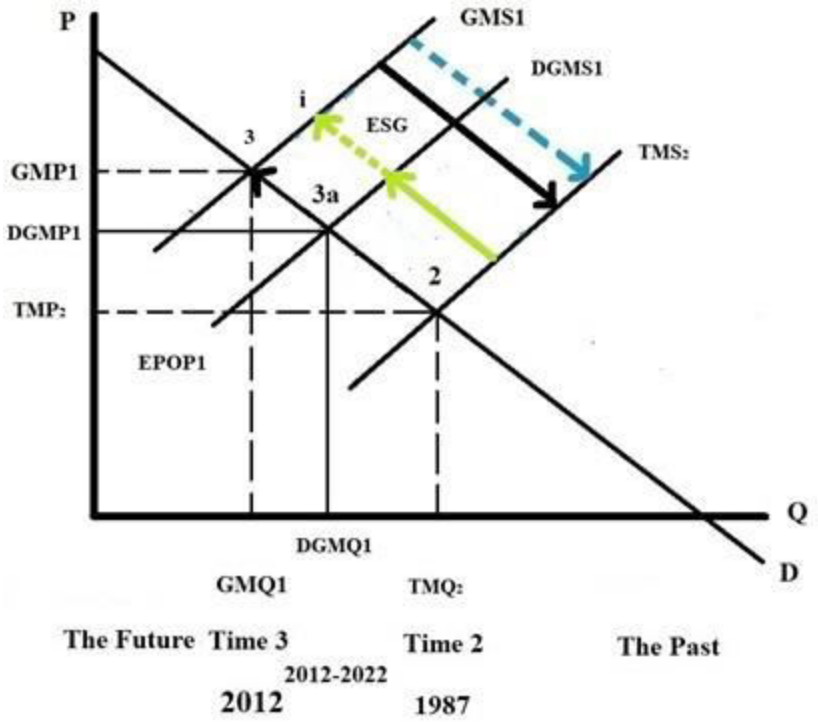



Figure 1 The structure of green market paradigm shift avoidance and the world of dwarf green markets

We can appreciate the following in Figure 1 above in terms of green markets (GM), dwarf green markets (DGM), and traditional market (TM) thinking, which the United Nations Commission on Sustainable Development during Rio + 20 conference should have been able to see: i) At point 2, we have the flawed traditional market model (TM), a paradigm that has been assumed to be optimal since 1776 (Smith 1776) when it is not, creating the environmental problem (EPOP1) in the process as represented by the continuous black arrow from point 3 to point 2, the problem to be corrected fully or to be partially fixed; ii) At point 3, we have the green market paradigm (GM), a paradigm without environmental abnormalities, a truly optimal paradigm, the point of optimal green development, representing a full correction of the environmental problem associated with distorted traditional markets by full environmental cost internalization as indicated by the continuous black arrow going from point 2 to point 3; and iii) Between point 2 and point 3 we have the dwarf green market paradigm at point 3a representing a partial correction as it still has an environmental sustainability gap (ESG) remaining separating it from green markets (GM) as indicated by the broken arrow from point 3a to point 3. In other words, at point 2 we have an environmental pollution problem (EPOP1) created by distorted traditional market prices in environmental terms, at point 3 we do not have an environmental pollution problem (SEPOP1) as prices reflect the environmental cost of business activity, and between point 2 and point 3 we have the dwarf green market solutions that accounts for some environmental cost or dwarf green margin (DEM) creating the remaining environmental sustainability gap (ESG) that affects its stability.

Therefore, a shift to green markets (GM) is a full fix as the root-cause of the environmental pollution production problem, distorted traditional market prices in environmental

terms, is fixed; and the dwarf green market (DGM) is a patched as the environmental pollution production problem continues while the patching is being implementing. Over all we can see that if we assume that the traditional market paradigm (TM) is a golden paradigm (GOP) when it is not, we can see how through time we can have an environmental sustainability problem as in Figure 1 above growing in front of our eyes, but we cannot see it as we assume it away under environmental externality neutrality assumptions at the core of traditional market thinking as markets are assumed to be able to expand without producing environmental externalities.

Finally, Figure 1 above in general helps us see that the United Nations Commission on Sustainable Development (UNCSD 2012a; UNCSD 2012b) had two choices, i) one choice was to fix the environmental pollution production problem by fixing the traditional market model fully and shift it to green markets if they had made that the priority with a transition path to full sustainability; and ii) the other choice was to just patch the environmental problems associated with the way traditional market thinking works by means of dwarf green markets with no link to the over-all goal of one day perhaps living in a world without environmental externalities; and the United Nations Commission on Sustainable Development chose to promote and implement the dwarf green market patch.

And this decision of choosing dwarf green markets over green markets in and since 2012 is a blunder in terms of development thinking i) first, because we have an environmental sustainability problem being addressed using dwarf green market sustainable theory, non-sustainability theory, indicating a violation of the theory practice consistency principle requiring sustainability theory for sustainability problems (Muñoz 2009), which in this case it requires environmental sustainability theory for environmental sustainability problems, and non-environmental sustainability theory for non-environmental sustainability problems, as we know that a green market is not a dwarf green market; and ii) second, because the move from traditional market pricing to dwarf green market pricing is a move from fully distorted market pricing-based markets in environmental terms to partially distorted market prices-based markets in environmental terms, all dwarf green markets operating under environmental sustainability gap pressures.

**c) The need to understand the nature and implications of the decision to go the way of dwarf green markets in and since 2012 Rio + 20**

The discussion above highlights the need to understand all the possible recommendations that the United Nations Commission on Sustainable Development (UNCSD) could have made in 2012 Rio + 20 process in order to stress how recommendations that match the nature of the problem would have work such as the green market solutions, how the recommendations that do not match the nature of the problem work such as dwarf green market solutions, and then use this knowledge to point out why choosing a solution that does not match the nature of the problem such as choosing dwarf green market thinking is the second development thinking blunder since 1987 in terms of theory-practice inconsistency (Muñoz 2009) as they do not reflect the nature of the environmental sustainability problem and in terms of paradigm evolution loop thinking inconsistency a la Thomas Kuhn (Muñoz 2022) as they do not fully remove the abnormalities creating the environmental sustainability problem.

**Goals of this paper**

1) To show the nature and implications of recommending a full fix a la green markets as the solution in terms of theory-practice consistency, Thomas Kuhn's paradigm evolution loop consistency, and how green markets works once in place; 2) To highlight the nature and implications of recommending a partial fix a la dwarf green markets as the solution in terms of theory-practice consistency, Thomas Kuhn's paradigm evolution loop consistency, and how dwarf green markets works once in place; and 3) To place the nature of both solutions in the same plane to point out clearly why going dwarf green markets since 2012 is the second development thinking blunder.

**Methodology**

First, the terminology used, and operational concepts and analytical tools are provided. Second, the different recommendations to address the environmental sustainability problem created by distorted traditional market pricing the United Nations Commission on Sustainable Development had in 2012 and the actual recommendation made are pointed out in general. Third, the nature and implications of recommending in 2012 a green market solution to the environmental sustainability problem created by the traditional market are highlighted. Fourth, how green markets once in place are expected to work is pointed out. Fifth, the nature and implications of recommending in 2012 a shift to dwarf green markets to solve the environmental sustainability problem associated with distorted traditional market pricing are stressed. Sixth, how dwarf green markets are expected to work once in place is indicated. Seventh, the reasons why choosing dwarf green markets as the solution in 2012 is the second development thinking blunder are given. And eighth, some food for thoughts and relevant conclusions are shared.

**Terminology**

---

| | |
|---|---|
| P = Price | Q = Quantity |
| D = Demand | A = Social system active |
| a = Social system passive | B = Economic system active |
| B = Economic system passive | C = Environmental system active |
| c = Environmental system passive | GOP = Golden paradigm |
| S = Sustainability market | TM = Traditional market |
| TMP = Traditional market price | TMQ = Traditional market quantity |

TMS = Traditional market supply SEPOP = Socio-environmental pollution problem

POP = Pollution problem EPOP = Environmental pollution problem

GM = Green market GMS = Green market supply

GMP = Green market price GMQ = Green market quantity

DGM = Dwarf green market DGMS = Dwarf green market supply

DGMP = Dwarf green market price DGMQ = Dwarf green market quantity

---

**Operational concepts and analytical tools**

**a) Concepts**

**1) Golden market paradigm,** a paradigm without abnormalities.

**2) Flawed market paradigm,** a paradigm with abnormalities.

**3) Traditional market paradigm,** a paradigm with socio-environmental abnormalities.

**4) Sustainability market paradigm,** a paradigm without socio-environmental abnormalities.

**5) Sustainable development,** a paradigm with remaining socio-environmental sustainability gaps.

**6) Red market paradigm,** a paradigm without social abnormalities.

**7) Green market,** a paradigm without environmental abnormalities.

**8) Dwarf green market,** a paradigm with remaining environmental abnormalities.

**b) Analytical tools**

***i) Merging rules***

If we have the following model paradigm P1 = km, P2 = Km, P3 = kM, and P4 = KM, then the merging rules are:

**P1.P2 = (km)(Km) = (kK)m, where kK = sustainability gap K = $SG_K$**

**P1.P3 = (km)(kM) = k(mM), where mM = sustainability gap M = $SG_M$**

**P1.P4 = (km)(KM) = (kK)(mM) = ($SG_K$)($SG_M$) = sustainability gap driven competition**

**P1.P1 = (km)(km) = km**

**P4.P4 = (KM)(KM) = KM**

***ii) The theory-practice consistency principle***

If we have a golden paradigm in theory TGOP = KM, golden paradigm problem in practice PGOP = KM, and you have a flawed paradigm in practice PFLP = Km

**1) Respecting the theory-practice consistency principle**

The theory must match the practice so that

**(TGOP)(PGOP) = (KM)(KM) = KM**

Golden paradigm theory (TGOP) is appropriate to address golden paradigm practice (PGOP) as golden paradigm theory matches the nature of the golden paradigm practice.

**2) Violating the theory-practice consistency principle**

The theory does not match the practice or visa verse so that

**(TGOP)(PFLP) = (KM)(Km) = K(Mm) = K($SG_M$)**

Golden paradigm theory (TGOP) is not appropriate to address flawed paradigm practice (PFLP) as golden paradigm theory does not work in the flawed paradigm world.

***iii) The Thomas Kuhn's paradigm transformation loop (TKPTL)***

If we have a flawed paradigm like FLP = Km, where "m" is the abnormality embedded in that system, we have a golden paradigm GOP = KM, with no abnormalities, and we have a sustainable development paradigm SDP = K($RSG_M$), with a remaining sustainability gap M ($RSG_M$) as the sustainability gap is partially closed, then the transformation loop theory leads to the following:

**1) The flawed paradigm to golden paradigm possibility theorem**

If abnormalities are fully removed the Thomas Kuhn's paradigm transformation has then the following structure

**$TKPTL_m$**

**FLP = Km----------> GOP = KM**

When the abnormality M is fully internalized, the flawed paradigm (FLP) shifts to take the form of the golden paradigm (GOP).

**2) The flawed paradigm to flawed paradigm possibility theorem**

If abnormalities are not removed the Thomas Kuhn's paradigm transformation has then the following structure

**TKPTL**

**FLP = Km----------> FLP = Km**

When the abnormality M is not removed, the flawed paradigm (FLP) remains a flawed paradigm as no paradigm shift can take place without removing the abnormalities.

**3) The flawed paradigm to sustainable development paradigm possibility theorem**

If abnormalities are partially removed the Thomas Kuhn's paradigm transformation has then the following structure

$$\mathbf{TKPTL_{PRm}}$$

$$\mathbf{FLP = Km\text{----------}> SDP = K(RSG_M)}$$

When the abnormality M is partially removed (PRm), the flawed paradigm (FLP) shifts imperfectly towards a sustainable development paradigm (SDP) under remaining sustainability gap (RSG) pressures.

**4) The sustainable development paradigm to golden paradigm impossibility theorem**

If abnormalities are partially removed the Thomas Kuhn's paradigm transformation has then the following structure

$$\mathbf{TKPTL_{PRm}}$$

$$\mathbf{SDP = K(RSG_M)\text{----------}> SDP = K(RSG_M)}$$

When the abnormality M is only partially removed there is a remaining sustainability gap ($RSG_M$), and hence, the sustainable development paradigm (SDP) remains a sustainable development paradigm (SDP) as the abnormality "m" is not fully removed, just partially removed (PRm), no way to become a golden paradigm (GOP) as there is no incentive to do so.

**5) Perfect paradigm shifts under the influence of the Thomas Kuhn's paradigm evolution loop**

If we have a golden paradigm Q = TKL and a flawed paradigm FLP = Tkl, then the following holds true:

**a) One step paradigm shift**

If we remove the two abnormalities in the flawed paradigm (FLP) at the same time, then the structure of the shift is the following:

$$\mathbf{TKPTL_{kl}}$$

$$\mathbf{FLP = Tkl\text{----------}> Q = TKL}$$

Fully removing both abnormalities at once leads to the flawed paradigm (FLP) shifting to a golden paradigm Q

**b) Two steps paradigm shift type 1**

If we give priority to removing fully abnormality "k" first and then remove fully abnormality "l", then the structure of the shift is:

$$\mathbf{TKPTL_k} \qquad\qquad \mathbf{TKPTL_l}$$

**FLP = Tkl----------> TP1 = TKl----------> Q = TKL**

Hence, removing fully abnormality "k" first shift the flawed paradigm to a transition paradigm TP1 = TKl, and then removing fully abnormality 'l" leads to the golden paradigm Q.

**c) Two steps paradigm shift type 2**

If we give priority to removing fully abnormality "l" first and then remove fully abnormality "k", then the structure of the shift is:

**$TKPTL_l$ $TKPTL_k$**

**FLP = Tkl----------> TP2 = TkL----------> Q = TKL**

Hence, removing abnormality "l" fully first shift the flawed paradigm to a transition paradigm TP2 = TkL, and then removing fully abnormality 'k" leads to the golden paradigm Q.

**6) Perfect and imperfect green market shifts**

`If we assume that the traditional market (TM) is a dominant economy (B) only model that generates only environmental externalities(E[C]), then its structure is TM = Bc since E(C) = c = environmental externality, and the following holds true:

***i) The shift from perfect traditional markets to perfect green markets***

If we remove fully the environmental externality E(C) = c, then the traditional market shift perfectly to perfect green markets, which can be stated as indicated below:

**TKPTLc**

**TM = Bc = B(ESG)----------> GM = BC**

If we subject the traditional market to the Thomas Kuhn's paradigm transformation loop and the environmental abnormality is internalized (TKPTLc), and therefore, removed, then we have a perfect paradigm shift/a free green market. Notice that the internalization of the environmental externality({I[E(C) = I(c) = C})

**ii) The shift from perfect traditional markets to dwarf green markets**

If we remove partially the environmental externality ($PR_{E(C)=c}$), then the traditional market shift imperfectly to imperfect dwarf green markets, which can be stated as shown below:

**$TKPTL_{(PRc = ESG)}$**

**TM = Bc = B(ESG)----------> DGM = B(RESG)**

If we subject the traditional market to the Thomas Kuhn's paradigm transformation loop and the environmental abnormality is only partially removed ($TKPTL_{PRc}$), and therefore, there is a remaining environmental sustainability gap (RESG), then we have an imperfect paradigm shift/ a non-free dwarf green market. Notice that the partial internalization of the environmental externality({$PR_{E(C)} = PR_{(c)} = PR_{(ESG)}$}) leads to the remaining sustainability gap ($RESG_C$).

**The different recommendations to address the environmental sustainability problem created by distorted market pricing that the United Nations Commission on Sustainable Development had available in 2012**

Below all the recommendations available in 1987 to solve the environmental sustainability problem (EPO) created by distorted traditional market pricing, both science-based recommendations such as green market solutions and non-science-based recommendations such as dwarf green market solutions consistent with the nature of the environmental sustainability problem as summarized in Figure 1 above are addressed below in detail, both graphically and analytically.

**The shifting perfect traditional market thinking to perfect green market thinking solution**

**a) The nature and implications of recommending a shift to green markets**

If the United Nations Commission on Sustainable Development (UNCSD) would have gone for a full fix of the environmental sustainability problem they were trying to solve they would have recommended the internalization the environmental cost of production associated with economic activity to shift the world of the traditional market (TM) to the green market (GM) leading to the situation summarized in Figure 2 below:

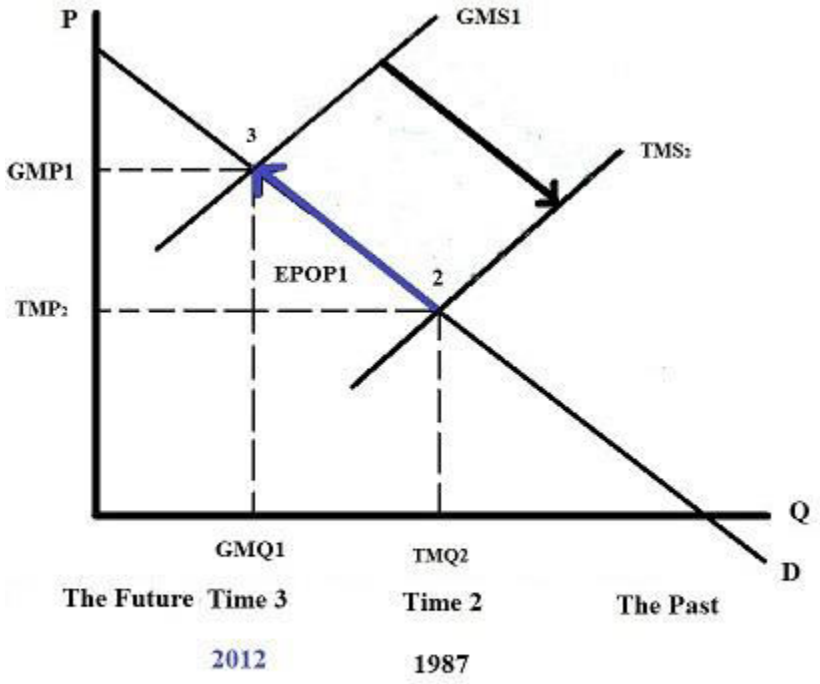
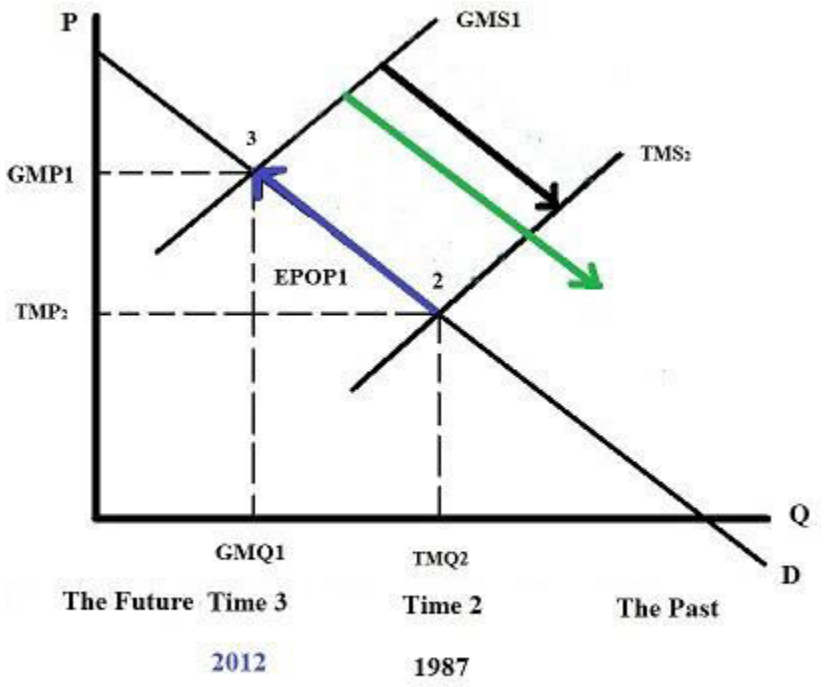



Figure 2 The expected shift from traditional market thinking(TM) to green market thinking in 2012 Rio + 20

Figure 1 above shows that the traditional market supply TMS at point 2 shift to the green market supply GMS at point 3 when the environmental cost of production is internalized closing the environmental sustainability gap (ESG = 0). Notice that environmental cost internalization{I[E(C)} leads to a green market price higher than the traditional market price (GMP >TMP) and to green market production and consumption lower than that in traditional markets (GMQ1 < TMQ1).

**b) The working of green markets once in place**

Green markets (GM) once in place should be expected to tend to produce at the lowest green market price (GMP) as here environmental pollution reduction is a good profit-making opportunity, as indicated in Figure 3 below:




**Fugure 3 Green markets(GM) once in place expand from left to right as they will tend to produce at the lowest green market price possible.**

Figure 3 above indicates that as the green market price (GMP) decreases the green supply will shift to the right of point 3 as more green goods and services will be produced and consumed at lower green market prices (GMP) as indicated by the green arrow going from left to right.

**The shifting of traditional market thinking to dwarf green market thinking**

**a) The nature and implications of recommending a shift to dwarf green markets**

As the world went the way of dwarf green markets (DGM) it is fair to assumed the United Nations Commission on Sustainable Development (UNCSD) chose to patch the environmental sustainability problem they were trying to solve as dwarf green markets reflect

only a portion of the environmental cost of production associated with economic activity to shift the world of the traditional market (TM) to the dwarf green market (DGM) leading to the situation stated n Figure 4 below:

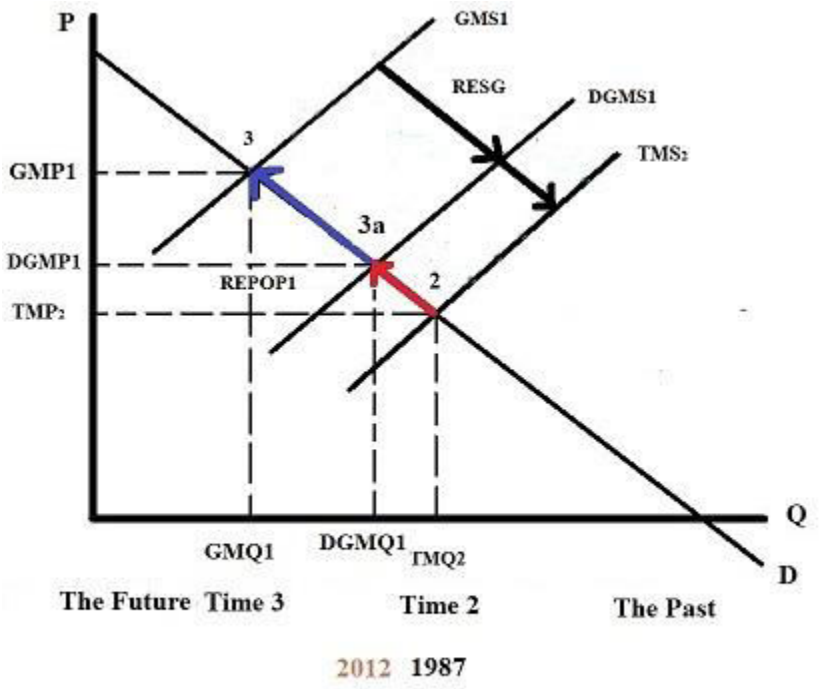



**Figure 4 The unexpected shift from traditional market thinking(TM) to dwarf green market thinking(DGM) since 2012**

Figure 4 above shows that the traditional market supply TMS at point 2 shift to the dwarf green market supply DGMS at point 3a when the environmental cost of production is partially internalized closing partially the environmental sustainability gap (ESG > 0) as indicated by the brown arrow from going from point 2 to point 3a. Notice that partial environmental cost internalization {PR[E(C)} leads to two things: i) to a situation where the dwarf green market price is higher than the traditional market price (DGMP > TMP) and to dwarf green market production and consumption lower than that in traditional markets (DGMQ1 < TMQ1); and ii) to the creation of a remaining sustainability gap (RGSG) that goes from point 3a to point 3.

**b) The working of dwarf green markets**

Dwarf green markets (DGM) once in place should be expected to contract from right to left as the partial environmental cost internalization is increased to reduce environmental pollution, and hence this way of pricing should not be expected to tend to produce at the lowest dwarf green market possible as pollution reduction below the partial cost internalization point at point 3a is a losing business opportunity, as shown in Figure 5 below:

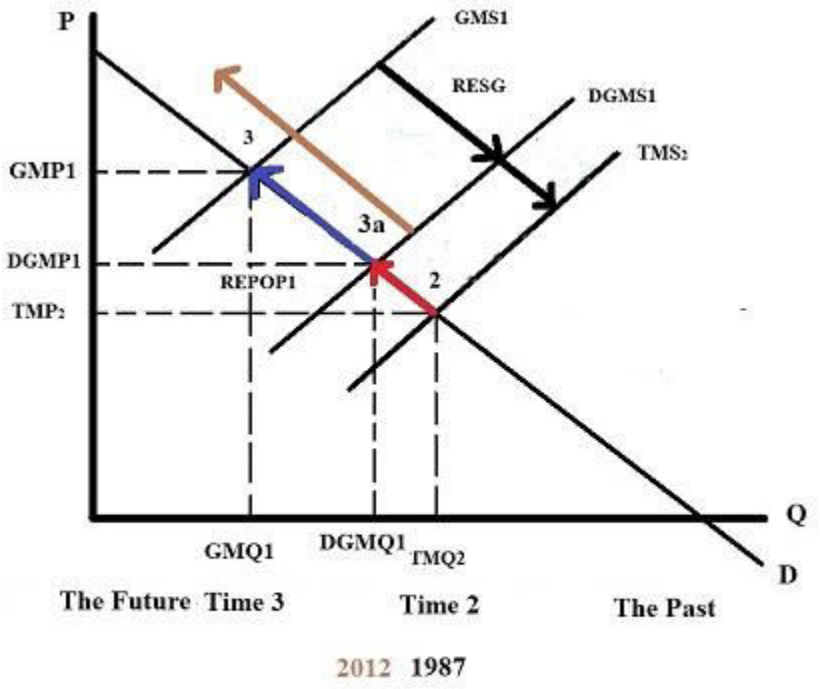



**Figure 5 Dwarf green markets(DGM) once in place contract from right to left as the pollution management cost is increased by the pollution reduction manager**

Figure 5 above indicates that as the dwarf green market price (DGMP) increases because of the increases in partial cost internalization the dwarf green supply will shift to the left of point 3a as fewer green goods and services will be produced and consumed at higher dwarf green market prices (DGMP) as indicated by the brown arrow going from right to left.

**The inconsistencies embedding in the recommendation of going the dwarf green market way**

The inconsistencies created by the move towards dwarf green markets from the theory-practice consistency principle and in terms of the Thomas Kuhn paradigm evolution loop expectations can be found by contrasting the shift to green markets and the shift to dwarf green markets in the same plane as done in Figure 6 below:

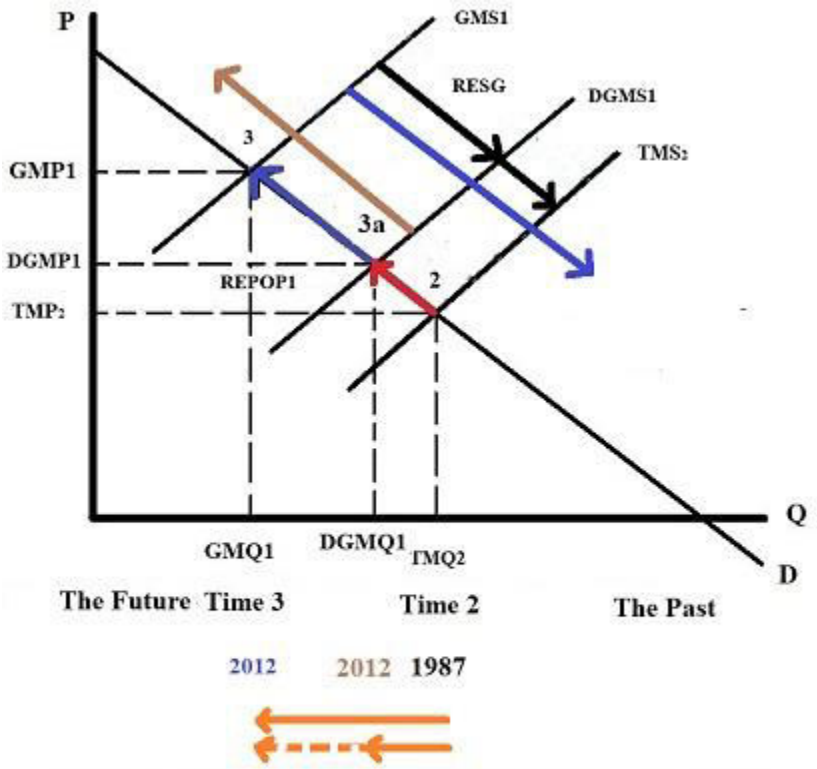



**Figure 6 The nature of the solutions available in 2012 to the United Nations Commission on Sustainable Development at Rio + 20 Conference and their theory-practice consistency and respect for Thomas Kuhn's paradigm evolution loop**

Figure 6 above shows the structure of the shift of the traditional market at point 2 to dwarf green markets at point 3a and to green markets at point 3 together with contrasting the facts that green markets expand from left to right as shown by the green arrow going from left to right and dwarf green markets contract from right to left as shown by the brown arrow moving from right to left. The continuous orange arrow going from right to left under the picture 6 shows consistency with the Kuhn's paradigm evolution loop expectations and the broken arrange arrow shows inconsistency with these expectations.

**a) The theory-practice consistency principle**

We can see that that at point 2 we have an environmental sustainability problem associated with the working of the traditional market (TM) as the traditional market thinking applied at point 2 assumes that expansions are possible without creating environmental problems when there is an environmental pollution production problem as this is possible because a flawed paradigm or environmental distorted paradigm is assumed to be optimal, when it is not. Hence at point 2 the thinking, optimal thinking, violates the practice, non-optimal practice, which is why the traditional market as per WCED 1987 needed fixing to make it environmentally friendly. In other words, traditional market thinking violates the theory-practice consistency principle as the optimality theory does not match the practice since as the market expands it creates environmental sustainability problems as the traditional market is an environmentally distorted market in practice. Hence, at the traditional markets expands to the right of point 2 in Figure 6

above more pollution based good and services are produced at lower traditional market prices expanding the sustainability gap that starts at point 3 beyond point 2 as more environmental pollution is created.

At point 3a we have an environmental sustainability problem partially addressed with a non-sustainability solution a la dwarf green markets (DGM), which leaves still a remaining environmental sustainability problem (RESG > 0) still active while dwarf green markets expansion takes place. Hence, the use of dwarf green markets violates the theory-practice consistency principle because a non-environmental sustainability solution is being used to address an environmental sustainability problem. As dwarf green markets contract when partial cost internalization increases pollution production decreases as less is being produced and consumed at a higher dwarf green market price, but they still have a remaining environmental sustainability gap.

At point 3 we have an environmental sustainability problem fully addressed with a sustainability solution a la green markets (GM) with no remaining sustainability gap (RESG = 0). Therefore, the use of green markets respects the theory-practice consistency principle because an environmental sustainability solution is being used to address an environmental sustainability problem. As green markets expand due to reductions in the environmental cost of doing business which leads to lower green market prices, we make money while polluting less as indicated by the green arrow going from left to right in Figure 6 above.

**b) The Thomas Kuhn's paradigm evolution loop expectation**

As indicated above, the traditional market is an environmentally distorted markets as it does not reflect in its pricing mechanism the environmental cost of production so it has an environmental abnormality embedded in its pricing mechanism, which needs to be fully removed a la Thomas Kuhn trough full environmental cost internalization to ensure a perfect paradigm shift. At point 3a we have the dwarf green markets (DGM) with its remaining environmental sustainability gap (RESG). Hence, the dwarf green market shift violates the Thomas Kuhn's paradigm evolution expectation as it is just a patch, not a full fix, as indicated by the broken orange arrow going from point 2 to point 3, where the remaining environmental sustainability gap still active (RESG > 0) that goes from point 3a to point 3 reflect the remaining environmental cost of production not accounted for yet. At point 3 we have the green markets (GM) without remaining environmental sustainability gap (RESG). Hence, the green market shift respects the Thomas Kuhn's paradigm evolution expectation as it is a full fix, not a patch, as indicated by the continuous orange arrow going from point 2 to point 3 where there is no remaining environmental sustainability gap (RESG = 0) as all environmental costs are accounted for.

**Why choosing the dwarf green market solution since 2012 is the second development thinking blunder?**

The discussion above is summarized in Table 1 below in terms of models that respect both the theory-practice consistency principle and that respect Thomas Kuhn's paradigm evolution loop expectations where the full removal of environmental abnormalities embedded in the distorted traditional market leads to shift to golden paradigms like perfect green market paradigms.

**TABLE 1 Possible solutions to the environmental sustainability problem**

| Solution | Respect the theory-practice consistency principle | Consistent with Thomas Kuhn's paradigm evolution loop |
|---|---|---|
| **Dwarf Green market Solution** | **NO** | **NO** |
| **Green market Solution** | **YES** | **YES** |

We can indicate the following based on the information in Table 1 above: First, we can see that green market solutions respect the theory practice consistency principle as environmental sustainability theory a la green markets applies to environmental sustainability problems. In other words, green market solutions match the environmental sustainability nature of the problem at hand. Green market solutions also respect the Thomas Kuhn paradigm evolution loop expectation as the removal of environmental abnormalities leads to paradigm shift towards green markets. Second, we can appreciate that dwarf green markets violate the theory practice consistency principle as they are using dwarf green market theory to address an environmental sustainability problem in practice, a theory-practice inconsistency that indicates that dwarf green market solutions do not match the environmental sustainability based nature of the problem at hand; and dwarf green markets also violate the Thomas Kuhn's paradigm evolution loop expectation as dwarf green market solutions do not remove the environmental abnormalities embedded in the dwarf market pricing mechanism so they operate a partially environmentally friendly mechanism while remaining environmental abnormalities such as the remaining environmental sustainability gaps, which are still active as shown in Figure 6 above: a paradigm evolution loop inconsistency as the embedded environmental abnormalities are not fully removed; and these violations make the choosing of dwarf green markets since 2012 by the United Nations Commission on Sustainable Development the second development thinking

blunder since 1987: they chose a patch to the critical environmental problem they documented instead of choosing a full fix instead.

**Food for thoughts**

1) Do we need to point out science-based environmental solutions when they exit even when they are not politically palatable? I think yes, what do you think? 2) Is implementing a non-science-based environmental solution under paradigm shift knowledge gaps academic tunneling? I think no, what do you think? 3) Is implementing a non-science-based environmental solution knowing that a science based one exist, or it is possible willful academic blindness? I think yes, what do you think? 4) Does the promotion of non-science-based environmental solutions require alternative academic facts? I think yes, what do you think?

**Conclusions**

The United Nations Commission on Sustainable Development through the RIO + 20 process knew that the distorted way in which the traditional market of Adam Smith works has led to an environmental sustainability problem and the solution of this is now a priority, a solution that according to the theory-practice consistency principle requires environmental sustainability theory to fix an environmental sustainability problem and according to the Thomas Kuhn's paradigm evolution loop expectation it is a solution that requires the elimination of the environmental abnormality embedded in the pricing mechanism of traditional markets as environmental costs are externalized. Hence, the solution to an environmental sustainability problem that respects the theory-practice consistency principle and the Thomas Kuhn's paradigm evolution loop expectation is not a dwarf green market solution, but a green market solution. The fact that the United Nations Commission on Sustainable Development in 2012 was willing to go the way of dwarf green markets to address an environmental sustainability problem makes this action the second development thinking blunder since 1987 as dwarf green market thinkings violates both the theory-practice consistency principle and the Thomas Kuhn's paradigm evolution loop expectation as dwarf green market solutions are patches, not fixes of the environmental sustainability problem they are intended to correct as remaining environmental sustainability gaps continue to be active as dwarf green market plans and actions are being implemented.

**References**

European Environment Agency (EEA), 2023. ***Accelerating the circular economy in Europe State and outlook 2024,*** Report 13/2023, Denmark.

Muñoz, Lucio, 2009. **Beyond Traditional Sustainable Development: Sustainability Theory and Sustainability Indices Under Ideal Present-Absent Qualitative Comparative Conditions, En:** ***Mineria Sustentable*****,** REDESMA, Vol.3(1), March, La Paz, Bolivia.

Muñoz, Lucio, 2016. **Beyond Traditional Market Thinking: What is the Structure of the Perfect Green market?, In:** ***International Journal of Science Social Studies Humanities and Management (IJSSSHM),*** Vol. 2, No. 5., May, Ed. Dr. Maya Pant, India.

Muñoz, Lucio, 2020. **Sustainability thoughts 102: How the shift from traditional markets to sustainability markets would have looked like had the 1987 Brundtland Commission recommended then a sustainability fix?, In***: **International Journal of Business Management and Economic Review,*** Pp. 110-120, Vol. 3, No. 02, ISSN: 2581-4664.

Muñoz, Lucio, 2022. **Sustainability thought 170: What happens to the Thomas Kuhn's paradigm evolution loop under willful academic blindness? What are the implications of this?,** In: ***International Journal of Education Humanities and Social Science (IJEHSS)***, Vol. 5, No. 04, Pp. 251-260, ISSN: 2582-0745, India.

Muñoz, Lucio, 2024a. **Sustainability thoughts 193: Does the current move from the period of green market paradigm shift avoidance 1987-2022 to formal circular economic thinking 2023-2024 make sense in terms of long-term environmental sustainability? If not, why not?,** In: ***International Journal of Education Humanities and Social Science (IJEHSS),*** ISSN: 2582-0745, May-June, Vol. 7, Issue 3, Pp. 566-578, India.

Muñoz, Lucio, 2024b. **Sustainability thoughts 195: Understanding the road from sustainable development thinking to green market paradigm shift avoidance 1987-2022: What are the implications of this?,** In: ***CEBEM-REDESMA Boletin*****,** Año 18, Nº 6, La Paz, Bolivia.

Muñoz, Lucio, 2025. **Sustainability Thought 198: Sustainability or sustainable development solutions: Pointing out the first major blunder in terms of development thinking and critical socio-environmental problems solving. In:** ***CEBEM-REDESMA Boletin*****,** Año 19, Nº 3, March, La Paz, Bolivia.

Organization for Economic Cooperation and Development (OECD), 2018. **THE MACROECONOMICS OF THE CIRCULAR ECONOMY TRANSITION: A CRITICAL REVIEW OF MODELLING APPROACHES** - ENVIRONMENT WORKING PAPER No. 130, April 16.

Organization for Economic Cooperation and Development (OECD), 2024. **Monitoring Progress towards a Resource-Efficient and Circular Economy,** OECD Publishing, June 26.

Organization for Economic Cooperation and Development (OECD), 2025. **Resource Efficiency and the Circular Economy,** Topics.

Smith, Adam, 1776. The Wealth of Nations, W. Strahan and T. Cadell, London, UK.

Trzyna, Thaddeus C., 1995. A Sustainable World: Defining and Measuring Sustainable Development. California Institute of Public Affairs, IUCN.

United Nations (UN), 2001. Indicators of Sustainable Development: Guidelines and Methodologies, Second Edition, Division for Sustainable Development, New York, USA.

United Nations (UN), 2007. The Millennium Development Goals Report, New York, USA.

United Nations Conference on Sustainable Development (UNCSD), 2012a. **Rio+20 Concludes with Big Package of Commitments for Action and Agreement by World Leaders on Path for a Sustainable Future**, Press Release, June 20-22, New York, NY, USA.

United Nations Conference on Sustainable Development (UNCSD), 2012b. **The Future We Want** , June 20-22, New York, NY, USA.

World Bank (WB), 2022. **Squaring the Circle: Policies from Europe's Circular Economy Transition,** Press Release, December 06.

World Commission on Environment and Development (WCED), 1987. ***Our Common Future***, Oxford United Press, London.

---

**Citation:**

Muñoz, Lucio, 2025. **Sustainability Thought 199: Green markets or dwarf green market solutions: Pointing out the second major blunder in terms of development thinking and critical environmental problems solving,** In: ***Advances in Social Science and Management (ASSM)***, Vol. 3, Issue 03, Pp. 31-46, UK. DOI: 10.63002/assm.33.937