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ISBN 978-90-481-9564-0



NATO Science for Peace and Security Series - C:
Environmental Security

Energy Options Impact on Regional Security

Edited by
Frano Barbir
Sergio Ulgiati

 Springer



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SEVEN POLICY SWITCHES FOR GLOBAL SECURITY

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Abstract Everyone desires a secure life. Yet the security of more and more regions is undermined by unreliable and unequal availability of basics such as energy, water, food, natural resources, funds, co-operation, trust and hope for the future. Shocks such as the credit crunch, infectious diseases, climate instability and ecological collapses are converging towards a ‘planet crunch’ where security would become a fond memory. Traditional policy-making, that manages problems separately and incrementally, offers only the illusion of protection against impending unaffordable and irreversible shocks affecting all people. Future security anywhere requires all facets of security everywhere. This ‘global security’ ambition can be sought with a new era of policy-making that encompasses the indivisibility, scale and urgency of all planet crunch issues. This paper offers a selection of seven simple ‘policy switches’ (or ‘leverage points’ in complex systems). Each policy switch offers an expanded vision of people’s role on Earth and a whole-system change to implement it. Together the switches define a practical strategy for global security, for a serious attempt at revival of co-operation, ecosystems and prosperity. The proposed policy switches are: (1) The strategy of aiming to reduce problems can be switched to reversing them with ‘positive development’. Less bad is not good enough. (2) Education can inspire a culture of joined-up thinking and engagement by switching from predetermined to curiosity-led learning. (3) Economic growth can be switched from consuming the basis for further growth to building it by correcting markets with ‘precycling insurance’. (4) Rapid global disarmament can be launched by switching from Gross Domestic Product to ‘Gross Peaceful Product’, that omits weapons-related transactions. (5) Exploitive commodification of the Earth’s surface can be switched to guardianship by international treaty that interprets ownership in terms of responsibility to future generations. (6) Surplus accumulations of financial wealth, which would be wiped out by the planet crunch, can be switched by the wealthy

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into investments that sustain all forms of wealth. (7) Global financial stability can be regained by switching money creation from the private sector to central public authorities and local currencies.

Keywords: Energy, climate, regional security, global security, credit crunch, planet crunch, revival, policy switches, vision, positive development, joined-up thinking, systems thinking, curiosity-led education, precycling insurance, Gross Peaceful Product, ownership, guardianship, wealth, philanthropy, money creation, money tree, local currencies

1. Security means Global Security

1.1. SECURITY INCLUDES NON-MILITARY THREATS

Security in the modern world means far more than military security and radical new non-combative solutions are needed to cope with new security challenges. This was highlighted by Professor Sir Brian Heap (2009), former UK Representative on the NATO Science Committee on the occasion of NATO's 60th anniversary: "security includes non-military threats arising from incompetent governance, corruption, organised crime, insecure borders, ethnic and religious conflict, proliferation of weapons of mass destruction, shortage of natural resources and, of course, terrorism." Traditional narrow concepts of security are obsolete. The future security of individuals, regions and nations requires a broad 'global security' vision that encompasses rapid effective solutions to all major economic, social and ecological challenges.

1.2. GLOBAL SECURITY IS NOT HAPPENING

The ultimate threat to global security is not to be found among the long list of specific challenges; rather it is that the moment of opportunity for effective action passes whilst humanity is otherwise occupied. According to UNEP executive director Achim Steiner, "political efforts to curb pollution, protect forests and avert climate change have proven totally inadequate" (Reuters 2008). Numerous other challenges are worsening, including insecure and unequal availability of energy, water, food, natural resources, funds, co-operation, trust and hope for the future. More than 50 states are already 'fragile' (United Nations University 2008a) and all others depend upon complexities, energy dependence and running costs that cannot be sustained. The credit crunch is becoming a 'planet crunch' (Greyson 2009b) of mounting instabilities and multiple converging shocks that threaten everyone.

1.3. THE AGE OF STUPID

A movie documentary released in March 2009 called ‘The Age of Stupid’ (Armstrong 2009) asked how humanity knew that climate change could make life unlivable and yet was entirely ineffective at solving it. This applies equally to every other planet crunch issue. Albert Einstein counselled, “We cannot solve today’s problems with the same kind of thinking we used when we created them.” Problems that are divided up to suit society’s specialisms may appear more manageable yet global problems are indivisibly joined-up and codependent (Greyson 2008). Reductionism hasn’t worked and ‘solutions’ devised within geographical, sectoral, organisational or symptomatic policy silos are inadequate, futile and illusory. The opportunity of seeking global security as a whole, for everyone, is neglected. The imperative of joined-up thinking and joined-up policy-making is a world-wide blindspot.

1.4. HOW TO FAIL

Failure to achieve global security will mean the collapse of modern civilisation, just as surely as the fate of past civilisations that were not sustainable. The timescale of failure is not predictable but likely to be abrupt due to troubled global systems having positive feedbacks (problems causing further problems) and ‘tipping point’ thresholds that trigger cascading shocks. Failure is assured by continuing to seek each facet of security separately and by managing problems with patchwork policies (Greyson 2008) devised in policy silos. The pursuit of ever more complex, expensive and tough controls on a barrage of worsening symptoms neglects the underlying circumstances that continue to cause those symptoms. Initiatives are considered practical and viable if they fit the same world-views and assumptions that perpetuate the problems. Security has been sought where it is ultimately unavailable, within financial, geographical and organisational ‘bubbles’ where some goals are temporarily met for some people.

1.5. THE PLANET CRUNCH PROCEEDS UNCHALLENGED

The potential loss of all that is valued is more than our minds can admit. Psychological self-defense diverts attention away from the overwhelming reality of the planet crunch and towards theatrical debates about special-interest topics such as emissions, weapons or economic growth. Roles that are played include defending and opposing the status quo, announcing tokenistic ‘breakthroughs’, promoting ‘white elephant’ investments, denial, fatalism and distraction by trivia. Newspapers and TV publicise and review

the performances. Researchers provide data and ideas for scripts. Policy-makers produce, direct, act and applaud, doing whatever it takes to 'keep the show on the road'. Each successive shock becomes the new hot topic. The flourishing of drama at this evolutionary crisis point should not be mistaken for an effective response. Every converging threat of the planet crunch proceeds unhindered by any plausible challenge.

1.6. HOW NOT TO FAIL

As Einstein suggested, we can think differently to solve today's problems. The planet crunch is paradoxically less overwhelming and more manageable when approached as a whole. Churchman (1979) prescribed a 'systems approach' where "...no problem can be solved simply on its own basis." Anyone can practise joined-up or 'systems' thinking. This can start with awareness that the selective targeting of intellect and compassion is the source of problems, not the solution. The relentless complexity of the planet crunch can be managed at 'leverage points' "where a small shift in one thing can produce big changes in everything" (Meadows 1999). Leverage points are here described as 'policy switches' to emphasise that the purpose is practical not academic. Carefully-designed policy switches are ideal for situations where rapid progress is necessary with big issues that have previously resisted meaningful progress, including all facets of global security. Obsolete paradigms can be changed rather than just constrained or accommodated.

1.7. MAKING THE SWITCHES

The switches do not neatly match up with symptomatic problems; for example there is no particular switch for climate change, energy, population, poverty or health. Each of these can be tackled by making all the policy switches and by the further actions that would then become viable. Policy-makers have previously been asked to do the impossible – to solve problems within policy silos. Thus the biggest problems remain unsolved. Now politics can demonstrate its relevance to people's lives by collaboration to create the circumstances for global security. The policy switches have the effect of aligning the self-interest of individuals and institutions with the shared imperative of a world that works, so the incentives are to do more rather than to resist change. The potential speed of an international response is illustrated not by the historical glacial pace of agreement on matters such as climate and disarmament but by the comparatively instant international action to bail-out the financial sector.

2. First Policy Switch: From a Strategy of Reducing Problems to Reversing them

2.1. LESS BAD IS NOT GOOD ENOUGH

The default strategy during decades of persistent global problems has been incrementalism – planning for ‘less bad’. However, less bad has proven not to be good enough. For example, incremental planning to cut waste has produced net increases in waste and incremental planning to cut emissions of greenhouse gases (GHG) has produced net increases in emissions. The consequent continuing global loss of resources and rise in GHG concentrations is removing the potential for future security. Incrementalism was plausible when gradual long-term problems seemed to require gradual long-term solutions. Unfortunately this didn’t solve any global issue. Today’s critical problems invite immediate switching to another strategy on an entirely new scale of ambition and effectiveness.

2.2. THE ILLUSION OF PROGRESS

The urge to advance is so fundamental that there is a tendency to imagine progress and development even when it isn’t happening. The looming planet crunch reveals a civilisation that has lost its way, where self-interest is misdirected to make things worse for everyone rather than better. *Is it still progress when a billion people go to sleep hungry? When ecosystems are exploited to the point of collapse? When debts outpace incomes? When nations seek peace and security behind walls of weapons? When accumulating waste gases re-approach the inhospitable atmosphere of the primordial past?* The planet crunch is progress in reverse, with systematic losses of financial, societal and ecological stability that undermine any realistic prospect of security in any region. Civilisation can proceed only with a new understanding of what it means to develop.

2.3. WHICH WAY FOR GROWTH?

Economic growth, the increase in income of nations, is the political icon of progress and development. Positive growth means more economic activity and growing tax revenues for government. However, the inventor of national income statistics, Simon Kuznets (1934) was the first to point out that growth was not designed to measure progress: “The welfare of a nation can scarcely be inferred from a measurement of national income...”. Growth provides no protection against running an economy that systematically removes the

potential for future growth and progress. The innumerable consequences of the planet crunch are expensive to cause, mitigate and adapt to, and all that spending contributes to economic growth but not progress. If the economy is like a vehicle then growth displays the changing speed but says absolutely nothing about which way it's going.

2.4. NO GROWTH IS NO ANSWER

There are three possible strategies for future growth. The **first** is less-bad growth, funded by rising ecological and financial debt; 'greener', 'cleaner', 'responsible' adjustments to today's activities. This is the default incremental strategy that is still promoted on the world stage despite its record of reinforcing rather than challenging conventional paradigms. The **second** strategy sees planetary destruction as the only possible outcome of continued growth; it sees the failures of markets but not their potential. It calls for the goal of economic growth to be abandoned and for markets to be constrained with centralised caps (or fixed limits) on resources and emissions (Jackson 2009). However, growth ignores resources, emissions and destruction; it is interested solely in the added-up financial value of economic activity. Just as a bad diet cannot be corrected by limiting the grocery bill, no-growth limits on economic activity would do nothing to inspire the necessary flourishing of valuable new patterns of activity. A scarcity mentality is no answer to the world's growing scarcities.

2.5. AIM TO REVERSE NOT REDUCE PROBLEMS

Any future for growth requires a **third** strategy. People are not inherently destructive and economic activity need not remain dependent on exploiting people, planet and the potential of the future. The economic vehicle need not remain stuck in reverse, making reverse progress. Janis Birkeland (2008) offers the third strategy option of 'positive development': "The view that negative impacts are an inevitable consequence of development has blinded us to the obvious. We could design development to increase the size, health and resilience of natural systems, while improving human health and life quality." This strategy is applicable to every planet crunch issue. For example, international climate talks have pursued a less-bad strategy of lower emissions (flows to atmosphere) when the crucial target (Hansen 2008) is lower concentrations (stocks in atmosphere), which are potentially achievable by positive development. All global problems must be reversed, not just worsened less fast.

2.6. THE PRIMARY LIMIT IS IMAGINATION

Anyone whose car is drifting backwards towards a cliff edge knows that the strategy for success is not to go slower or more steadily, but to change into forward gear and accelerate away safely. Humanity is speeding towards economic, social and ecological cliff-edges so why is attention absorbed by the decoy strategies of less-bad and no-growth? Less-bad is an appealing strategy for those focused on awareness and political will as limiting factors. The aim of reducing damage can be widely agreed and endlessly debated, with all participants 'doing what they can'. Those who focus on the limits of nature's capacity to accommodate human activity are attracted to the no-growth vision of tough government-enforced boundaries to contain unsustainable aspirations. Positive development offers both groups the opportunity to unite society and markets in achieving far more than just limiting further damage. This strategy is limited not by politics nor by nature, but by imagination.

2.7. REAL LASTING VALUE

Positive development goes further than not making things worse. It invites attention to the neglected stockpiles of financial debt (personal, corporate and national), ecological debt (such as lost nature and surplus concentrations of GHG) and social debt (such as overpopulation, surplus concentrations of weapons, habits of conflict and surplus concentrations of wealth). These combined 'debts' reveal the extent of civilisation's self-harm and must be promptly 'paid back' to ensure any form of future security. All this activity should not be viewed as a cost but as investments in the future that also boost current economic growth. Illusory progress and invented financial value can be replaced with real lasting value. The following policy switches can, if all are implemented soon enough, rapidly institute positive development world-wide.

3. Second Policy Switch: From Predetermined to Curiosity-Led Learning

3.1. ESCAPING THE OLD IDEAS

The remaining policy switches could enable positive development to become the defining vision of a new era of co-operation and abundance. Or the moment of opportunity could pass unnoticed amidst a predictable escalation of chaos. Which outcome depends not on any technical obstacles that shape the bounds of possibility but on the frame of mind of those who

encounter the opportunity. The opportunity will be either dismissed as too hard or pursued into practice depending on the balance between the comfortable familiarity of old habits of thought and openness to the new. John Maynard Keynes (1936) prefaced his *General Theory*, “The ideas ... are extremely simple and should be obvious. The difficulty lies not in the new ideas, but in escaping the old ones.”

3.2. CURIOSITY KILLED THE CATASTROPHE

The future is currently predetermined along ‘tram-lines’ of unreliable assumptions that are taken for granted rather than actively considered. The innately flexible human mind must be enabled to respond with sufficient creativity for the future to be instead determined consciously. This can be achieved by attending to the missing ingredient in both education and policy-making – curiosity. Lack of curiosity about the availability of options allows the planet crunch to proceed whereas a blossoming of curiosity would enable the rigorous, creative, joined-up thinking needed to elude impending catastrophes. “When we experience curiosity we are willing to leave the familiar and routine”, according to psychologist Todd Kashdan (2009). Today’s predicament requires an immediate awakening of curiosity on a planetary scale.

3.3. TEACHING DISENGAGEMENT

Any society that values its ability to face the future can allow its learning and education to be led by curiosity rather than the delivery of ‘right answers’. “Kids start out creative but we lose it at school” was a 9-year old girl’s comment recorded during the author’s work in the UK government’s flagship creativity project for government-funded schools (Greyson 2009a). Habits of creative thought cannot be cultivated by assuming that inquisitive young minds must be moulded into established patterns of thinking. In modern centrally-planned education, knowledge is chopped into lesson-sized chunks, pre-packaged and fed to children. Success is measured by children’s acquiescence in first ‘swallowing’ and then ‘bringing up’ facts and skills when probed with tests. Politicians then wonder why so many people feel alienated and disengaged.

3.4. IN PURSUIT OF KNOWLEDGE

George Bernard Shaw long ago paraphrased the necessary switch; “what we want to see is the child in pursuit of knowledge and not knowledge in

pursuit of the child.” Schools that have made this switch, such as Lewes New School in England (Kettles 2009), simply allow learning to follow the curiosities of the class, which range broadly and deeply across the entire curriculum and the possibilities of our time. The UK’s 5 year long Nuffield Review (Pring et al. 2009) of secondary education and training explains that teaching should be “an engagement of minds” not “delivery of a curriculum devised elsewhere for transmission to the learners”. As role models for the fascination of discovery, teachers can facilitate an endless flow of learning. Children who experience this system get the same (or better) skills as other children, including strong personal and social problem-solving skills, but they do not get pre-packaged thinking.

3.5. AN ERA OF THINKING BIG

If education were to make this switch, society would be instituting a culture of creativity and innovation. The quality of ideas would rise along with the quality of participation in decision-making at all levels. Governments would find that engagement rather than control tackles disruptiveness both in the classroom and in society. The herd thinking that underlies both the credit crunch and the planet crunch would be perpetuated no longer. Any nation instilling a culture of curiosity would gain such a competitive advantage that all nations would be galvanised to follow. People everywhere could echo the words of another primary school student reflecting on the author’s sessions in her school: “I learnt that I could have big ideas” (Greyson 2009a).

3.6. JOINED-UP SOCIETIES

Getting unstuck mentally is a change of mind and need not be a struggle. By contrast the mind that lacks flexibility is in a state of continual struggle that is expressed in real-life stresses and struggles. Conflict, crime, terrorism, anti-social behaviour and many other ailments are products of a compartmentalised, fatalistic, ‘us versus them’ world-view that excludes wider possibilities and perspectives. Fragmented thinking brings fragmented societies. A spread of curiosity, from governments switching educational models, to newspapers reporting it, to parents and children experiencing it could spark a cultural renaissance where populations surprise themselves with what they can achieve co-operatively.

4. Third Policy Switch: From Consuming to Building the Basis for Economic Growth

4.1. LINEAR ECONOMICS

Four decades ago the economist Kenneth Boulding (1966) wrote about the “reckless, exploitative and violent behaviour” associated with the mythical possibility of endless frontiers available to be claimed and fouled. He poetically called this the ‘cowboy economy’, though today it is commonly called the ‘linear economy’, to envisage the default economic vision of a conveyor belt of resources becoming wastes (Leonard 2008). All forms of wealth and security including; climate stability, co-operation, trust, biodiversity, ecosystem services, resource availability, soil fertility, air and water purity, health, sharing and democratic accountability are depleted by the systemic error of running a linear economy. Linear economics consumes the basis for future growth so what is now growing fastest is unproductive activity, inactivity and instabilities. The credit crunch marks the withdrawal of faith in growth-as-usual and any reliable revival of growth and prosperity requires a switch of vision.

4.2. CIRCULAR ECONOMICS

Boulding envisaged the economy taking part in a “cyclical ecological system which is capable of continuous reproduction of material form even though it cannot escape having inputs of energy.” This is not academic: China’s 11th 5 year plan for 2006–2010 established a national goal of circular economics, “It is an overall, urgent and long-term strategic task for China to vigorously develop the circular economy” (Zhou 2006). The future for growth is circular economics where more economic activity would mean a faster pace of change away from waste-making and towards looking after the world and all its inhabitants. This would preserve and regenerate material value, co-operation and natural capital instead of losing it, so growth would work to build the basis for more growth. Today this may appear idealistic. Yet if circular economics was already practiced, and people were accustomed to prosperity based on resource security, then any proposal to adopt an exploitive self-defeating vision would be laughable.

4.3. PRECYCLING

Economic dependence on waste is perpetuated by managing waste primarily as an addiction to disposal, “how can we get rid of all this junk?” The

‘waste hierarchy’ (reduce, reuse, recycle, then dispose) that has been available since 1975 (European Union 2008) is commonly quoted but in practice the bulk of effort and funding provides for continuing long-term disposal to ecosystems (by landfill, waste-burning and pollution). The waste hierarchy is being used backwards and no nation has yet attempted to create the incentives for an economy that grows from the work done to end waste dumping and implement circular economics. This is achievable with the concept of ‘precycling’ (O’Rorke 1988) originally used for public waste education. Precycling is applicable throughout an economy (Greyson 2007) and may be understood as *action taken to prepare for current resources to become future resources*. The ‘pre’ prefix emphasises that this cannot be arranged after something becomes waste; it must be done beforehand. The scope of action extends far beyond recycling, to creating the economic, social and ecological conditions for all resources to remain of use to people or nature.

4.4. PRECYCLING INSURANCE

A simple economic tool is available to switch from linear to circular economics and from dumping waste to dumping the habit of wasting. This tool internalises diverse externalities efficiently within markets by paying the price of preventing problems instead of the larger or unaffordable price of not preventing them. Precycling insurance is an extension of the EU WEEE Directive’s ‘recycling insurance’ (European Union 2002) from just recycling to all forms of preventing all products becoming waste in any ecosystem. This allows a single economic instrument to work with the issues at every stage of product life-cycles. Significant producers would be obliged to consider the risk of their products ending up as waste in ecosystems and to retain responsibility for insuring against that risk. Suitable design principles for precycling insurance have been fully outlined in the NATO Science Programme (Greyson 2008).

4.5. ‘LIFE INSURANCE’ FOR PRODUCTS AND PLANET

Precycling insurance is a form of regulation to be set-up in every nation but not centrally planned. The volume of regulation can be cut but its effectiveness drastically boosted. For example, emissions can be cut rapidly with no need for any further ineffectual negotiations about capping. Unlike taxes, the premiums from precycling insurance would not be handled by governments (whose role would be to legislate, monitor and ensure full public transparency). Unlike conventional insurance, the premiums would not be

collected up and then paid out following (potentially irrecoverable) planet crunch shocks. Premiums would be distributed by insurers and invested preventively throughout society, to cut the risk of resources being lost as wastes. Support would be provided for the dialogue, understanding, participation, capabilities, designs, efficiencies, facilities and ecological productivity needed to return used matter as new resources for people and for nature. Today's resources would feed tomorrow's economy.

4.6. A FREE MARKET IN HARMONY WITH NATURE

Precycling insurance would switch the power of markets to reversing the planet crunch. The speed and scale of change would exceed the expectations of all who are accustomed to ineffectual controls designed to make markets less-bad. All market participants (such as buyers, sellers, investors and governments) would adapt their decisions to the new incentives, profiting by addressing actual needs rather than superficial consumerist wants. Producers would remain free to choose how to meet customers' needs without waste, and even free to continue making wasteful products, in competition with other producers cutting their costs (including precycling insurance costs) by cutting their product's waste risk. Economic growth would no longer be a competitive scramble between people rushing to acquire and discard ever more resources from an every-shrinking stock. The economy would prosper in harmony, rather than in conflict, with nature.

4.7. SHRINKING MATERIAL AND ENERGY DEMANDS

The material requirements of today's linear economy would rapidly shrink since the new incentives would lead to the most needs being met with the least materials moved the least distance and then regenerated rather than dumped. The energy requirements of today's linear economy would rapidly shrink since a smaller material flow with higher quality materials closer to where they are needed requires less energy to process. For example, a factor 10 improvement in resource productivity would dampen energy requirements by up to 80% (Schmidt-Bleek 2008), putting renewables within easy reach world-wide and putting waste-making energy sources (such as new coal-fired plants, nuclear, food or forest-consuming biofuels and mixed-waste incineration) back on the shelf. Shrinking energy dependence is the key to energy security, economic recovery, climate restabilisation and prevention of conflict over diminishing non-renewable resources. The resource and energy efficiency of circular economics makes it realistic to plan the necessary reductions in GHG concentrations (ie net-negative emissions).

5. Fourth Policy Switch: Reversing an Unintended Incentive for Conflict

5.1. MILITARY SECURITY CAN'T BE BOUGHT

Global military spending in 2008 is estimated at \$1464 billion (SIPRI 2009), an increase of 45% since 1999. Yet the acquisition of military security primarily by military spending is an unobtainable illusion. "One only need consider the enormous expenditures the United States has made to counter the threat posed by improvised explosive devices (IED). The United States has spent literally billions to counter these crude, inexpensive, and extraordinarily effective devices. If one were to multiply this ratio against a global enemy, it becomes unexecutable." (US Joint Forces Command 2008). Military personnel and nations can be protected not with expanded budgets for more weapons but with an expanded vision.

5.2. SECURITY MEANS GLOBAL SECURITY

A 2007 speech by the NATO Secretary General (de Hoop Scheffer 2007) set out a new preventive strategy for global security, "...our prevailing security paradigm has shifted. And the new paradigm can be summed up in just one word: engagement. We need to address the issues where they emerge, before they end up on your and my doorstep... NATO must be prepared to address security challenges at their source, whenever and wherever they arise." The old paradigm of high dependence on armed engagement with problems that were previously not prevented is a strategy for bankruptcy in a world of unwinnable conflicts. Effective engagement with the sources of conflict requires a new set of policies that works beyond traditional 'us versus them' security analysis. It requires unprecedented investment of intellect, compassion and money in every facet of security for all people. The new security paradigm must be global security.

5.3. ESCAPING CYCLES OF CONFLICT

If circular economics is implemented before planet crunch issues become irreversible then many of the current threats to international security would fade. However investment in a secure future would still be starved by the massive global spending on weapons. Rising weapons spending feeds a cycle of ever-stronger cultural dependence upon force and ever more suspicion between communities. Funds spent on threat and counter-threat are lost to the new security paradigm. The level of weapons spending reveals

the degree of dependence on the old security paradigm and the use of weapons reveals the extent of failure to engage preventively with today's problems. All the campaigns on arms control, and all the diplomatic attention to the proliferation of conflicts have been unable to break the global cycle of conflict. However a simple macro-economic correction is available to directly switch security paradigms and to implement a replacement cycle of self-reinforcing peace and security.

5.4. SHOULD GROWTH INVITE GROWING CONFLICT?

The national income statistics used to measure economic growth include a perverse incentive in favour of greater economic and military dependence on weapons. Gross Domestic Product (GDP) currently includes weapons-related transactions so nations with high dependence on weapons gain higher GDP and higher political status despite accumulating armaments indicating poorer prospects. Politicians aspiring to boost economic growth cannot ask the wider economy to earn more but they can choose to spend more on weapons and indulge in military adventures. Spending on weapons feeds a cycle of conflict as other nations feel obliged to respond to defend themselves. Individual security efforts add up to a collective absence of security. The vast investments in preparing for the worst are unavailable for global security, thus ensuring worst-case outcomes.

5.5. GROWTH AS A 'WEAPON' FOR PEACE AND SECURITY

A replacement cycle of global disarmament and global security can be invited by switching from Gross Domestic Product to 'Gross Peaceful Product' (Greyson 2008) that simply omits weapons-related transactions. Nations can implement GPP as a diplomatic statement of intent to build a more secure world, and as a badge of peace. GPP provides a replacement benchmark for the economic growth of all nations in which higher GPP and higher growth more accurately indicates improved future prospects. Nations adopting Gross Peaceful Product would be rewarded for lower reliance on weapons with comparatively higher economic growth. The new security paradigm of global security would become real by being funded. A self-reinforcing cycle of less weapons spending, less armed threat and more co-operation would be instituted internationally.

5.6. GPP BY INTERNATIONAL AGREEMENT

GPP is the simplest of all proposals for GDP adjustment and requires no estimates or predictions of the costs of damage, yet it provides decision-makers with a powerful incentive. GPP can be presented on the world stage by any nation or any international body desiring peaceful international relations. It provides the means to implement the long-awaited commitment in Chapter 26 of the United Nations Charter (UN 1945) where member nations agreed “to promote the establishment and maintenance of international peace and security with the least diversion for armaments of the world’s human and economic resources”. In a time of recession, the savings from a shrinking global dependence upon weapons spending would release scarce public funds to boost growth by lowering the tax burden and stimulating spending on productive approaches to security.

5.7. SPREADING A CULTURE OF NON-COMBATIVE PROBLEM-SOLVING

GPP does not inhibit any nation’s military defence choices; in fact it makes national security more achievable and affordable by actively spreading a non-combative problem-solving culture world-wide. Problems that are prevented or resolved co-operatively never reach the stage of requiring armed threat and bloodshed. Nations would see other nations switching investments from the old security paradigm to the new. Those who have felt abandoned and alienated would gain hope from tangible opportunities for collaborative engagement. Agitated young men in every country, prone to carrying knives or worse, would see governments practising what they preach about non-violence and collaborative values. Terrorist recruiters and street gangs would progressively lose their recruiting power. Peace would be given a chance.

6. Fifth Policy Switch: Including Guardianship within Ownership of the Earth

6.1. THIS ONE’S FINISHED, CAN WE HAVE A NEW PLANET PLEASE?

A study involving more than 1,360 experts worldwide over 4 years warned of an “increasing likelihood of nonlinear changes in ecosystems including accelerating, abrupt, and potentially irreversible changes” (Millennium Ecosystem Assessment 2005). The latest international scientific synthesis report about climate (International Alliance of Research Universities 2009) warns

of “an increasing risk of abrupt or irreversible climatic shifts”. This means that humanity is undefended against the day when critical ecosystem services are no longer available and not replaceable at any cost. If so, people will have won every individual battle against nature and then suddenly, tragically lost the war. Nature would endure but civilisation would not.

6.2. VALUING NATURE?

Pavan Sukhdev, author of the EU-commissioned study *The Economics of Ecosystems and Biodiversity* (TEEB 2008) reports that the world is losing more wealth from the disappearance of forests than from the credit crunch, “...at today’s rate we are losing natural capital at least between US\$2–5 trillion every year.” The relentless conversion of nature to cash provides only a facade of wealth-creation that masks the reality of collective impoverishment. Historically much effort has been devoted to nature conservation but action is now needed with unprecedented speed and effectiveness. Schemes to value nature by paying for it (including the above precycling insurance) can help but they risk reinforcing the commodification of the Earth. All such schemes are up against continuing large-scale exploitation and destruction that excuses itself very simply by saying, “It’s mine”.

6.3. BELONGING

“A person lives on the land for a brief time and is gone, but the land endures. So people must be careful to preserve it - to live by the old Native saying that, ‘The real owners of the land have not been born yet.’ Among Native people, the land and all that grows upon it is treated with the greatest respect. It, and everything in it, is sacred, and it’s up to the people who use it to protect it as well.” (Gale 2002). This native Canadian quote is typical of indigenous cultures’ views on ‘belonging’. Any serious attempt at prospering in partnership with nature requires a rapid switch of emphasis from assumed ownership of the Earth to a sense of belonging to the Earth. A culture of belonging and guardianship is equally suited to private, state and commons areas of the Earth. Such a culture is a precondition for reversing the loss and degradation of the ecosystems on which everyone’s life and livelihood depends.

6.4. OWNERSHIP CAN EVOLVE FROM MASTERY TO GUARDIANSHIP

Existing practices of ownership of the Earth’s surface haven’t worked since they rely on every individual owner respecting a rarely observed line

between natural capital and the sustainable ‘interest’ of renewable harvests. This line and a sense of belonging to the Earth can be restored with a policy switch within the cultural and legal meaning of ownership. Ownership of a piece of the Earth can be reinterpreted by international treaty as a duty of care to future generations. All land, sea and non-renewable resource ownership title can be interpreted as a title of guardianship of ecological capital. All rights for access and use of natural resources can be interpreted as applying only to the renewable harvest, to diminish neither biological diversity nor ecosystem services. Use of non-renewable resources can encompass a compensating expansion in ecosystems and a guarantee (such as precycling insurance) of protecting the resources within circular flows.

6.5. LET’S TRY FORWARD GEAR

Reversing the loss of nature is not a bad deal for owners, as can be explained by farmers of barren lands and fishermen of barren seas. Making this switch is like finding a car rolling back towards a cliff edge and helping the sleepy driver to locate forward gear. Although the driver may be startled by the intrusion, they would be pleased to be able to move on safely. Society would discover that abundance and prosperity accord with an expansion of nature, rather than its subjugation. The battle with nature can be ended quickly and permanently. One class of owner will remain unhappy; the minority with no intention other than to convert their corner of the world into private profit. The political choice is between catering for this exploitive minority or expanding nature’s abundance for the benefit of all.

6.6. COMPENSATION

This policy switch effectively gifts the world to the unborn future. In compensation, the present gets to have a future. Nations would gain new reasons to co-operate more and fight less. Populations characterised by separateness would learn to create and share abundance. Depleted soils and waters would be restocked with diverse life. For those with less interest in such tangible compensations there are more direct options. Those who have degraded ecosystems may be relieved of the privilege of ownership. Those without an interest in guardianship could bid for funds to compensate them for the transfer of title to a community-based trust of landless people. Funds could also be provided for bids to permanently leave undisturbed high-risk non-renewable resources, such as fossil fuels and heavy metals.

7. Sixth Policy Switch: Recruiting the Mega-Rich to Inspire a Mega-Transformation

7.1. ACKNOWLEDGE THE WINNERS

If economics is a board game where players set out to own more than others then the mega-rich are the world's winners. The richest 2% of adults own more than half of all global wealth (United Nations University 2008b) and the winnings of the wealthiest continue to rise because wealth enables more wealth. The success of the winners should be acknowledged and then a new 'game' compatible with global security should be started, with benefits to all including today's winners. Central to this new game is how to bring surplus wealth (wealth beyond the needs of its owners) back into play. Politics, being dependent on contributions from those with the means to pay them, has in general failed to implement effective progressive policies for either incomes or assets, so a deeper systemic change is required.

7.2. IT'S CRUNCH TIME EVEN FOR THE MEGA-RICH

The planet crunch cannot be eluded by any fortress mentality, such as skepticism, materialist escapism or security fencing. Pandemics, civil unrest, political instability, armed struggle, ecosystem collapses and financial turmoil can harm anyone anywhere and those with the most have the most to lose. The steady worldwide diversion of wealth towards the wealthiest was previously financed by borrowing from the future. A bubble of credit and ecological debt made it possible for the majority of the world's population to meet their basic needs, for governments to obtain economic growth and for wealth to concentrate. Further financial or ecological borrowing from the future is a strategy for collapse so any future society that is stable enough to run at all can run only from currently generated wealth. The world must quickly change to pay-as-you-go and past accumulations of assets are the only store of wealth sufficient to support this change.

7.3. SWITCHING TO A NEW WINNING STRATEGY

The winning strategy for the mega-rich is a policy switch from accumulation to a new game of creating a world where wealth can retain meaning; a world where the planet crunch is replaced by global security. By peer-pressure and peer-dialogue, the mega-rich can coordinate their collective abilities and assets in expanding the world's ambitions from 'less bad' to

positive development. Without this leadership, with its mindset of opportunity and abundance, it will be too easy for the public and institutions to remain absorbed in small plans that don't matter and big plans that don't work. Today's markets await an underlying vision of a successful future with real lasting wealth to replace volatile speculative bubbles and accounting tricks. Today's money awaits the backing of activities that work to generate believable value. The massive stockpile of problems awaits being matched with the massive stockpile of wealth.

7.4. TRANSFORMATIONAL PHILANTHROPY

“The problem of our age is the proper administration of wealth, so that the ties of brotherhood may still bind together the rich and poor in harmonious relationship.” Andrew Carnegie’s (1889) call for philanthropy may be heard today as a last call. Carnegie foresaw the accumulation and hoarding of “intense individualism” being systematically corrected by the most wealthy self-organising to administer their surplus wealth “to produce the most beneficial results for the community”. Modern philanthropists such as Doug Tompkins echo the call, “What if the 10,000 richest people in the world would do what I did? Bill Gates, Warren Buffet, the Sultan of Brunei, the Saudi princes – they could change the entire world.” (Zeller 2005). Philanthropy on a scale sufficient to ensure global security requires no self-sacrifice, just enlightened self-interest.

7.5. PRESERVING WEALTH BY SHARING IT

Money and all other stores of value rely upon functioning stable economic, ecological and social systems. If the planet crunch proceeds then at an unpredictable moment these systems will not function and the meaning of money and assets will vanish. The status of the wealthy would vanish. Native cultural traditions such as potlatch, that accorded most status to those who were able to share the most, provide a model to support modern ‘recycling’ of surplus wealth (Trosper 1998). Paradoxically, accumulated wealth can now be preserved only by being shared. Governments can act to support and invoke a peer-led global philanthropic transformation in many ways. For example, the international trend toward opening up ‘tax havens’ provides a strong incentive, if financial authorities agree to provide favorable treatment to such funds used philanthropically.

8. Seventh Policy Switch: Local and Central Creation of Money

8.1. WHERE DOES MONEY COME FROM?

Almost all new money is issued into national economies as credit via the 500 year old fractional reserve system (UK Parliament 1931) that was set up for metal money. In this digital era governments issue only small portions of the money supply as notes and coins. The Federal Reserve Bank of Dallas (2009) explains the recursive lending in fractional reserve banking, “Banks actually create money when they lend it. Most of a bank’s loans are made to its own customers and are deposited in their checking accounts. Because the loan becomes a new deposit, just like a paycheck does, the bank ... holds a small percentage of that new amount in reserve and again lends the remainder to someone else, repeating the money-creation process many times.”

8.2. HARVESTING THE MONEY TREES

This basic information about where money comes from is generally unknown to the public and rarely mentioned by financial professionals as it makes money seem unreal, like something growing on trees. (The ‘money trees’ of money issuance are known to economists technically as ‘seigniorage’.) Banks don’t keep the new money they create by fractional reserve banking but they do profit from the interest charged when loaning it out. The creation of almost all money as credit means that as money supply grows so does the debt of the economy. The pressure of keeping up with repayments of loans and interest squeezes economic activity towards speculation and unsustainability. During global recession, debts by vulnerable individuals, organisations and nations will be unpayable on a scale that invites global shocks. Governments and communities can choose between waiting to experience these shocks and rethinking money.

8.3. OVER-HARVESTING

Allowing financial institutions to harvest the money trees creates incentives for over-issuance of credit by competing banks (Gersbachd 1998). Other players in the economy have the incentive of easy credit and governments have the incentive of tax revenues from permitting ever more credit used for ever more spending. Unreal salary and bonus incentives for financial bosses and whizz-kids ensured that the money trees were over-harvested until the financiers themselves lost faith in the process and the credit crunch began. The credit crunch and recession might not be escapable without sufficient

attention to the underlying systemic errors. The rethinking of finance should start with asking whether the money trees (money creation) would be best harvested for private or public benefit?

8.4. MONEY TREES CAN PROVIDE PUBLIC BENEFIT

“The privilege of creating and issuing money is not only the supreme prerogative of government, but it is the government’s greatest creative opportunity.” wrote Abraham Lincoln (1865), who won the American Civil War by printing and spending into circulation \$450 million of green printed (‘greenbacks’) full legal tender treasury notes. Hitler built his ill-fated inter-war popularity in Germany by creating money used for employment in work-creation projects (Liu 2005). The UK’s recent practice of ‘quantitative easing’ (making up for the scarcity of money supply from bank credit) is money creation by the Bank of England. The public benefit in this case depends upon the extent that the new money begins to support ‘bottom-up’ employment and productive activity rather than ‘top-down’ bail-outs and institutional asset purchases.

8.5. THE MONEY TREES CAN BE SWITCHED FROM PRIVATE TO PUBLIC BENEFIT

The financial benefit to banks from being keepers of the money trees is modest, estimated at only £21 billion annually for the UK (Huber and Robertson 2000). It is also evident that a private casino ethos is unsuited to the responsibilities of preserving economic stability for the benefit of bankers and non-bankers alike. Money creation can be permanently switched from private to public benefit by creating money in future centrally (by a public owned and accountable body) and locally (by local public-interest bodies or self-organised communities). The resulting public benefit would be the sum of all the new money that is created by spending it into the economy, plus the savings on interest by reducing debts. It is also possible for central and local bodies to create money as interest-free credit. Local currencies can avoid the trap of being ‘play money’ (vouchers swapped for national currencies) by spending, discounting or loaning new money into productive use.

8.6. FROM MORE DEBT TO MORE POSITIVE DEVELOPMENT AND GLOBAL SECURITY

Any economy dependent on creating money as interest-bearing debt cannot escape a future of mounting debt. Even when the entire planet is exploited

for short-term profit the debts still grow. Keeping the economy going has become a confidence trick of preserving faith despite the spread of distrust, systemic instability and predatory profiteering. Given this situation, harvesting the money tree for public benefit may seem too good to be true. Yet it can be done without fear of inflation or disruption to banking business (Huber and Robertson 2000). It can provide the necessary supply and circulation of money, solidly underpinned by the lasting value and meaning of activities that contribute towards global security.

9. Conclusion

The flood of problems, locally, regionally and globally, already exceeds the capacity of researchers, policy-makers and the wider society to cope. The strategy of handling problems one at a time, a bit at a time, has not worked and cannot work. The solutions are not to be found where they are being sought, within the narrow territory of each symptom. Time is short but a new strategy is available: it is the 'system' that must be fixed, not all the separate symptoms. The boundaries of what is realistic need not be set by the struggles of the past nor current economic conditions. What is possible must match what is necessary. Habits of thought, world-views and economic rules-of-the-game can be switched from accelerating the planet crunch to reversing it. The goal of global security, implemented by the proposed policy switches, offers the possibility of future stability, security and prosperity. These switches redirect attention from the daunting list of changes that would be seen if things were working, to the manageable list of changes to make things work. This is not academic nor complicated and if acted upon people would soon wonder why it wasn't done long ago.

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