

NGO-DISCUSSION PAPER CSD 18
SECOND Draft 19 November 2009

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Introduction:

NGOs and other civil society organizations have played an active and significant role in helping the world move towards sustainable development. From grassroots organizations working locally on issues ranging from social justice to sustainable community development, to NGOs and NGO networks working with businesses and different levels of government to promote broad social change and ecologically sustainable economies and lifestyles, civil society organizations are key allies in the move to change unsustainable consumption and production patterns. NGOs have also been holding governments' feet to the fire: as one of the UN Major Groups, NGOs are taking stock of their respective countries' actions with regard to their commitments made to sustainability in Agenda 21 and in the Johannesburg Plan of Implementation, and are deeply concerned about the lack of significant progress made.

The CSD-18 presents a late but nevertheless significant opportunity to explore progress made by UN-member States on mining, chemicals, waste and transportation through the lens of their international sustainable-development commitments, and to discuss them within the broader framework of consumption and production patterns.

Even though the original "10 Year" frame—2002 to 2012—which was established as a corrective response to the implementation gap of the previous decade, was missed, the "Marrakech Process", whose mandate is to develop a "10 Year Framework of Programmes in support of regional and national initiatives to accelerate the shift towards sustainable patterns of consumption and production that will promote social and economic development within the carrying capacity of ecosystems", offers an avenue by which both existing and new regional and national initiatives around mining, chemicals, waste, transportation as well as all other sustainability-related themes can be supported.

We believe it is essential that governments and the business sector everywhere commit to implementing policies that will guide us towards a sustainable course. It is equally essential that citizens everywhere are empowered to act in relation to sustainable production and consumption, and are enabled to assume their rights and responsibilities in this respect. In that light it is very important that there is a special focus on building empowerment and democracy for governments and civil society organisations, not only in Western and developing countries, but with special attention to the countries in transition where democracy is still a vague concept.

It is a fact that social and environmental trends have worsened since Rio - acknowledged at both the UN's 5- and 10-year reviews of progress on sustainable development - but calls for an understanding of why the commitments and objectives made at Rio have not been

heard. It is clear that part of the problem has been the increasingly unsustainable production and consumption patterns and the uneven pressures of globalization. The material and financial flows from the global South towards the global North still outstrip all the aid and development assistance that the rich countries provide—an amount still far below from the 0.7% of GDP pledged 18 years ago at the Rio Earth Summit. The consequences of such unbalanced relations and lack of meaningful cooperation makes the gap between rich and poor even worse. Those financial and material flows we can consider as a kind of reversed international cooperation aid. The poor South helping to maintain the lifestyles in the industrialised world. It is of utmost importance that the CSD review evaluates how these and other forces have blocked progress in the past, and how we might overcome them in the future. A serious review of "implementation" requires a whole systems approach that includes clearly defined, concrete and measurable targets, timetables and monitoring.

We suggest that more research work is done on national and international level on material flows, impact of consumption and production patterns on environment, poverty reduction and equity. Even more important is the need to determine the underlying drivers of the flows that cause poverty on one hand and extreme wealth on the other hand. We also suggest that GDP as a national indicator is insufficient and would urge the world community and political leaders in particular to include other indicators in their national accounting, including the Ecological Footprint, the Index of Sustainable Economic Welfare, the Genuine Progress Indicator and the Happy Planet Index as important indicators of real SD.

A continuing priority must be for governments to implement their long-standing commitment to prioritize and integrate sustainable production and consumption policies into their National Sustainable Development Strategies, as this policy integration will help to overcome many of the obstacles impeding overall progress on sustainable development. A few countries have made progress in establishing and implementing national plans on SCP, or managed to integrate SCP policies in a NSSD or PRSP. In addition it is clear that not enough emphasis has been put on proven instruments that drive SCP changes, such as taxation and other fiscal tools, product norms and choice editing and empowerment of citizens for sustainable lifestyles via education.

The issues of mining, transport, chemicals and waste are strongly interconnected with SCP, and cannot be seen in an isolated way. The challenge of this CSD cycle is to discuss the other issues within a SCP-framework.

The 10 Year Framework of programmes: Sustainable Production and Consumption

The main obstacles in moving forward can be summarized as:

Technological advances and efficiency gains are necessary, but will not in and of themselves bring about the required scale of change towards sustainable development; despite the rhetoric around efficiency—presumably to avoid the real underlying, but politically difficult, questions of wealth redistribution and absolute reductions in energy and material consumption at the global level. More fundamental changes are needed. The world community—with rich countries taking the lead—must shift to a “sustainable and fair economy” paradigm, and not a mere wasteful pursuit of financial development with little regard for social development, poverty reduction, redistribution of use of natural resources and protection of ecosystems.

In 1992, in Agenda 21, countries committed to developing national policies on sustainable production and consumption. This was followed by an International Programme of Work to clarify the concepts and evaluate policies and strategies. In 1999, the UN General Assembly adopted the revised UN Guidelines for Consumer Protection to help develop those policies. Yet almost two decades after Rio, many governments still have difficulties in developing production and consumption policies and applying them in key issues as chemicals, transport, water, food, shelter, energy and other issues on the CSD's programme of work. Despite their commitments, many governments have, not only, not applied the Consumer Guidelines (and especially section G on sustainable consumption), but remain unfamiliar with them and find it difficult to develop their National Sustainable Development Strategies (NSDS) - an indicator of lack of progress and commitment.

The reasons for this lack of progress are numerous, and the consequences will become increasingly serious if they are not understood and addressed. The obstacles (being financial, economic, technological, ideological, cultural, cognitive) must be identified and addressed. The CSD is one of the best places to consider those, as a key part of the review of progress and in the discussion of policies to ensure progress.

But the main problem is that although nowadays we face huge crises, where the inter-linkages between environmental, social and economic possibilities are shown, world leaders still remain preaching business-as-usual policies. Political will is lacking for an urgent transition. But also (international) legal frameworks are missing for avoiding and punishing environmental crimes or injustice.

National strategies on SCP:

We feel that resistance by governments in developing adequate national SCP policy frameworks is combined with a continued promotion of unsustainable consumerism, an erosion of trust and accountability of the private sector, inadequate regulation for sectors whose profits depend on unsustainable consumption (as witnessed by the global financial crisis) and finally a lack of understanding of forces driving unsustainable production and consumption patterns.

Given that only 82 countries are implementing their National Strategies for Sustainability, and relatively few of these are in the developing world, support needs to be provided to assist governments in completing their national strategies for sustainability, to begin to fully

implement them, and to integrate their 10 YFP as a key part of their national strategy plans. It must be determined why Capacity 2015 was never funded nor implemented; and the international community must put in place sufficient programmes and support to ensure that this can and will be done. The same goes for the UN Guidelines for Consumer Protection.

The Marrakech Process (10 Year Framework of Programmes on sustainable consumption and production – 10YFP) and the CSD

The third draft as outcome of the Marrakech Process has evolved substantially from earlier versions, and many comments that NGOs have made over the past two years have been integrated successfully. As the current draft further evolves between now and May 2010, it will serve as a starting point for UN-member States and Major Groups to initiate discussions at CSD 18 with respect to the structure and content of the 10YFP, to be finalized at CSD 19. The strength of the 10YFP seems to be the Mapping Tool as presented in Annex 1 of the draft paper; new and existing regional and national initiatives led by governments, civil society organizations, etc. have an opportunity to be supported through multi-stakeholder partnerships if they are presented to the world in the Annex 1 table.

This draft of the 10YFP says that we need to “identify specific activities, tools, policies, measures and monitoring and assessment mechanisms, including, where appropriate, life-cycle analysis and national indicators for measuring progress,” thus the CSD process ought to determine the extent to which each of these are, or are not, already in place and the types of national and international programs and support that would be needed to ensure that they are implemented around the world.

A major effort is needed as a part of the review process to determine what percentage of the materials and goods that humanity produces is recycled and reused and what percentage is just discharged into the natural environment or thrown away. Similarly, the percentage of easily recovered minerals that have already been mined should be determined along with how long they will last at current and projected rates of mining.

The international community also needs to examine the extent to which monies have, or have not, been made available to support civil society’s efforts both to develop and participate in mechanisms and partnerships that can and will deliver support for design, adoption, and implementation of SCP programs and policies. The only regulatory, financial and legal frameworks that are appropriate would be those leading towards rapidly achieving full sustainability and ensuring that all people’s basic human needs can and will quickly be met, preferably by 2020 or 2025.

However we feel that the 10YFP is not clear on a number of issues including:

- How the “inputs from the Marrakech Process to the CSD intend to move the SCP agenda along” (p. 5, Third Public Draft, 2 September 2009).
- The link between the Marrakech Process and the CSD two-year cycle.
- How Governments, NGOs as well as other Major Groups and stakeholders the world over will feel engaged by the 10 YFP and compelled to fill out the Mapping Tool Template in Annex 1)

- The time frame that the 10 YFP corresponds to; we support another 10 years as beginning in 2012 and continuing to 2022.
- The lack of review based facts and figures on social and environmental trends which need to be reversed within the "lifespan" of the 10 YFP.
- A comprehensive review of the various SCP initiatives and their impacts.
- A system for effective monitoring and evaluation which includes various indicators, such as gender equalities, carbon emissions, food miles, water use, etc.

Possible approaches and best practices for implementation;

There is a need for more coherence in policymaking. SD has to be the framework for all long term strategies and policies.

The "beyond GDP" debate, as started up in Europe, can be strengthened and upgraded to a higher level for policy making. There are already best practices on indicators, e.g. Bhutan with the happiness index, or other indicators such as Index of Sustainable Economic Welfare, Sustainable National Income, Ecological footprint and social indicators. This will lead us to abolish the growth-obsession and focus as well on the economy of enough (to stop overconsumption and in favour of redistribution of wealth).

Strict product norms are a good tool for increasing the choice editing for consumers. Japan is a positive example, using energy legislation to ban products which are not energy-efficient. One could think of banning SUVs, a product of which we cannot legitimise the production in a peak oil period. More focus on the production side, to guide the consumption side.

Education on SCP is very important. Partly this can be achieved by giving information, but most of all life-long learning by experience and exchange is appropriate. Sharing information widely about the best practices through mass media, by creating national and international information exchange and communication between journalists, paying special attention to so called new media. Creating a better image of sustainable products through developing new methods in advertising and transparent labelling.

How to mobilise further action; Reporting on major-groups-led result oriented activities on SCP

The 10YFP should map-out what a sustainable future holds; and CSD 18 and 19 should begin to discuss and define this. For example, SCP might require such goals as: making a 100% transition to renewable energy, full restoration of the natural environment, complete phase out of toxic materials, zero waste, all externalities included and responsibly dealt with in the manufacture and development of all goods and services, and guarantee basic human needs for all peoples.

NGOs have played a important role in developing and promoting the SCP-agenda – including the UN Consumer Guidelines, and the concept of corporate accountability. NGOs have proven to be very creative and experienced in bottom up approaches, so are best placed for implementation. SCP has to be linked with other cross cutting issues and with active involvement of all stakeholders at various levels.

A lot of stakeholders work in isolation: connecting innovators is crucial for coherence and driving force for change. Many government administrations have also have a tendency to work in isolation. Transition management pleads for joint thinking and acting. The role of media has to be improved and be used as actor/change agent for transition.

On Corporate Social Responsibility and accountability, the Global Reporting Initiative (GRI) has developed an interesting set of global sustainability reporting guidelines and these could be made obligatory for big corporations.

Companies who joined the UN Global Compact are ready for communication about SCP and sustainable development in general. NGOs should be incorporated very closely in this kind of communication.

The need is to stress innovation, research and societal changes that support SCP and to identify obstacles, tools, strategies, and roles that include all stakeholders, including government at all levels. Thus the economy should be based on the provision of public goods and services rather than on consumerism. The United Nations and the Commission on Sustainable Development need to develop a specific process, supportive activities, and mechanisms to assist all countries in realigning their subsidy programs and policies for sustainability. Any unsustainable use of natural resources must fully pay for itself and for the costs to replace lost resources.

MINING:

The spirit of language of Agenda 21 and JPOI seem overly positive in comparison to the on-the ground experiences of mining activities both in 'developing' and 'developed' countries.

Restrictions

A constant criticism of the activities undertaken by transnational mining is the lack of interest and respect for the local communities. In many cases the state is becoming more and more synonymous with the business of looting of natural resources and environmental destruction, resulting in the accumulation of a social and ecological debt of companies and countries with local communities, especially in southern ecosystems.

This trend has been consolidated, and due to large scale mining the concept of ecological and social debt is gaining ground in the discussion on development and sustainability in the South. To name a few huge problems local communities have to deal with:

- Violation of ILO 169 and UN Declaration on the rights of Indigenous peoples
- Violation of land rights (dispossession of land)
- Increasing existence of bribing and corruption
- Destruction of natural resources on which local economies and food supplies are based upon: trees and forests, agricultural land, water, ..
- Health problems and death (for humans and animals) by contamination,
- General environmental damage and destruction, which also threatens peace and security

When local communities question the exploitation of natural resources and the very negative impacts on their living conditions, conflicts often reach levels of violence with high social costs for the communities. We see from government side a criminalisation of the environmental and indigenous movement, which give them less space to fight for their human right to live in a healthy environment.

In zones of mining exploitation, national legislation to protect the water quality, quantity and accessibility is crucial, as it impacts directly on the health and livelihood of local communities, especially indigenous peoples and women. Currently such legislation is weak or lacking in many jurisdictions.

Obstacles

Access to information, consultation and social en environmental impact assessment in the earliest stage, is fundamental for the knowledge to make decisions on whether or not the development of such projects is positive. NGOs and other organizations support communities and have extensive experience in collecting, systematizing and analyzing information on mining activities and their impacts on different regions of the planet. However, data are often collected only after the damage is done.

Frequently economies of local communities are classified as activities that are not economically viable activities within the framework of globalization and international market supply. They are however providing food for their people and supplying local markets. The extractive industry doesn't bring them much positive effects, only negative ones. Even for jobs, mining companies tend to search workers in poor urban neighbourhoods.

It is known that the villages abandoned by extractive industries are the poorest and most polluted. The extractive model does not consider alternative post-mining development. Neither does the State deal with this problem. So, not even during the extractive activities the result is positive for the communities. After the extractive activities have come to an end the problem is even bigger and the damage is irreversible. Ghost towns and poverty are the sad reality of the "modern development".

Possible approaches and best practices

International and national policy and legislation has to be developed to ensure that there is priority of human right of production of food, clean water, healthy environment and security over mining interests and profits.

Communities do not always reject the extractive activity but require strict compliance with environmental regulations and measures to protect the environment, ecosystems and health of the population. This also goes for the protection of their means of livelihood. Water is the most sensitive and crucial for the population and traditional production activities.

The main investments and mining companies are of Northern origin and most of the products exploited are for the development in the North. Here is where we see a strong interlinkage with the unsustainable patterns of production and consumption and economic interests.

Mining activities would not exist in their current magnitude if there were no banks behind them. Therefore Northern investments in the mining industry have a heightened responsibility for the impacts on regions in the South, these investments should at least follow the OECD Guidelines for Multinational Enterprises.

Here it seems essential to strengthen North-South partnerships that will allow analysis to discover and push on both ends of the production chain to achieve less demand of minerals (SCP), so that impact of mining will be reduced as well. Although facts show that not all mining processes are related exclusively to the needs of the north.

In regions where extraction activity has formed part of the reality of the population, cleaning programs has to be part of decreasing the damage made and support alternative (economic) activities for the local community.

CHEMICALS

Trends and obstacles

Adequate information on toxic chemicals is still not available: Chapter 19 of Agenda 21 emphasizes that, "The broadest possible awareness of chemical risks is a prerequisite for achieving chemical safety." However, nearly two decades later, very little information exists for nearly 80,000 – 100,000 chemicals currently in use.

Toxic chemicals in products threaten human health. Harmful chemicals in products have become a global problem through international trade. Examples include children's toys, textiles, jewellery, electronics, furniture etc. Vulnerable groups such as children and pregnant women are at particular risk from exposure to a variety of substances contained in these products. There is no global system for providing information on chemicals in products to consumers and others.

Key principles for chemicals regulatory policy are not widely implemented. Broad incorporation of four core principles of chemical regulatory policy has not occurred: no data no market, right to know, substitution, and the precautionary principle.

- No data no market would require a comprehensive set of data and information about a chemical is made available to regulators and to users before it can be sold.
- Effective implementation of right to know would provide data relevant to the health and environmental impacts of chemicals not only to the government, but also to the public.
- The progressive substitution of the most dangerous chemicals when suitable alternatives have been identified creates economic incentives for enterprises that are able to bring safer alternatives into the market.
- The precautionary principle underpins the idea that manufacturers, importers and downstream users ensure that the chemicals they manufacture, place on the market or use do not adversely affect human health or the environment. However, nearly two decades after Rio Principle 15 recommended its implementation, political pressure has converted its use into a debate about whether action can be taken if there is uncertainty.

Inadequate civil society participation in decision-making: Public participation in chemical assessment and management is still inadequate, lacking in resources and commitment and is not consistent with Rio Principle 20.

Highly hazardous pesticides still harm human, animal and environmental health and the environment: In many developing and transition countries, pesticides are the largest source of chemical exposure and resulting harm to health and the environment.¹ In South and Southeast Asia, nearly half the workforce is involved in agriculture and in Sub-Saharan Africa, two-thirds of all employed workers engage in agricultural activities.² The FAO Code of Conduct has not been fully implemented and the progressive ban of highly hazardous pesticides has not occurred.

Global contamination of fish with mercury: Eating fish is a staple food for protein in many parts of the world including Asia, Africa, and Small Island Developing States. However fish are widely contaminated with mercury which is highly toxic to humans, especially children. Mercury is traded globally, used in products and chlor-alkali plants, and emitted from coal-fired power plants, incinerators, cement kilns, and contaminated sites.

Developing and transition countries need financial and technical resources for sound chemicals management: Available funds are not sufficient for sound chemicals management in developing and transition countries. Many countries have substantial legacy issues such as obsolete pesticide stockpiles and contaminated sites. A large number require development of infrastructure and capacity. New and additional funds need to be long term and sustainable to have a lasting impact.

Chemical safety has not been successfully integrated into sustainable development planning: In 2006, Ministers of Environment and Health from more than 100 countries along with private sector and civil society representatives finalized the Strategic Approach to Chemicals Management (SAICM) re-affirmed that there is a critical link between chemical safety, sustainable development, and poverty eradication in the Dubai Declaration.³ To date this commitment has not been fulfilled. Donor countries insist on country driven programs and say that if developing countries do not prioritize sound chemicals management they cannot grant the money. On the other hand, developing country officials who understand the link and recognize its importance often find themselves in low capacity or politically weak ministries and cannot get sound chemicals management accepted as a government priority for development assistance. Support for chemical safety becomes unpredictable as it is delivered on a project by project basis instead of occupying a place at the core of economic and development policies at senior levels of government.

Internalization of costs has not been broadly implemented: The Polluter Pays Principle⁴, and its application to the internalization of costs chemicals management is widely supported but not broadly implemented. When chemicals are produced or used in a country, it is an obligation of the government to ensure that human health and the environment are not harmed as a result of chemical exposure or chemical accidents. The costs governments incur in fulfilling this obligation are economic externalities that arise as a result of economic

¹ *Acute Pesticide Poisoning: A Major Global Health Problem*, J. Jeyaratnam, World Health Statistics Quarterly, Vol. 43, No. 3, 1990, pages 139-44, <http://www.communityipm.org/toxictrail/Documents/Jeyaratnam-WHO1990.pdf> estimates that there are possibly one million cases of serious unintentional pesticide poisonings each year, and an additional two million cases of people hospitalized for suicide attempts with pesticides

² *Employment by sector*, ILO 2007; <http://www.ilo.org/public/english/employment/strat/kilm/download/kilm04.pdf>; (cited by MA Watts, 2009)

³ "The sound management of chemicals is essential if we are to achieve sustainable development, including the eradication of poverty and disease, the improvement of human health and the environment and the elevation and maintenance of the standard of living in countries at all levels of development."

⁴ Rio Principle 16

decisions by industry to manufacture and to use chemicals.⁵ Without internalization, the costs the governments incur for sound chemicals management amount to a subsidy of the private sector. One way to remedy these inefficiencies is to create mechanisms for internalizing costs. The global chemical industry has an annual turn-over of approximately USD \$3.1 trillion per year (trillion = thousand billion). If a global cost recovery scheme yielded only 0.1% of the industry's annual turnover more than USD \$3 billion would be available for sound chemicals management.

Liability and compensation: SAICM is the principal political program of action for implementing the JPOI, Agenda 21 and the Rio Principles, but during its negotiation, a small number of developed countries opposed any inclusion of liability and compensation (Rio Principle 13).

New developments and challenges

Nano-materials: Nano-materials incorporating very small nano-particles are already used in a wide range of domestic, industrial and food products without adequate information on their safety.⁶ No country has yet introduced nanotechnology-specific regulation that requires mandatory safety assessment tailored to the new risks of nano-particles. The overwhelming majority of workers handling nano-particles are not informed of the fact. No products are labelled.

Children's environmental health: Children are more at risk to chemical exposure because they have higher respiration and metabolic rates than adults, they eat and drink more per bodyweight, and they live life closer to the ground, crawling, digging in dirt and putting objects in their mouths. WHO, UNICEF, and UNEP have identified a growing number of children's health impacts from exposure to hazardous chemicals.⁷ Despite this, most chemicals in use have not been adequately tested for harm and or for their combined impacts on children.

WASTE

Introduction

There is no waste in nature, and human systems need to work this way also. If this vision is accepted, it changes fundamentally the way materials will be designed, traded, used, and discarded. This should be the main goal for a zero-waste society.

It seems a very long way from this clean, elegant vision of design and perfectly closed materials cycles to the teenage boys living and sniffing glue on the Dandora dumpsite in the centre of Nairobi, but the real distance is rather small. In a world where sustainability,

⁵ Externalized costs include legacy issues such as obsolete stockpiles, and contaminated sites as well as children whose development has been impaired as a result of pre-natal and post-natal chemical exposure; others whose health has been injured as a result of chemical exposure; those providing health care services to such people when the injured are not able to pay for the services; property owners or users whose property value or utility decreases as a result of chemical contamination; fishers, hunters, small farmers, and others whose livelihoods are impaired by chemical contamination; indigenous peoples whose way of life has been undermined through contamination of their traditional foods; people whose water supply is contaminated; and others. Externalities of modern agriculture can include depletion of water, soil, and biodiversity; pollution by pesticides and fertilizers; and the resulting economic and social costs to communities.

⁶ Examples include food additives, fuel catalysts, sports goods, specialty building equipment, electronics, household appliances, sunscreens and other products.

⁷ These include asthma, birth defects, hypospadias, behavioural disorders, learning disabilities, autism, cancer, dysfunctional immune systems, neurological impairments, endocrine and reproductive disorders.

fairness, and measures to end poverty have a real influence on how cities govern themselves, what do we do with two billion tonnes of waste generated last year, this year, and in 2011, when it will have grown by 37% to nearly two and a half billion?

Are these billions of tons correctly designed to enter air, water, or land? Who will bear the cost of the contamination, disruption, and pure nuisance that they cause? Who will pay the veterinary bills for extracting 20 kgs of plastic from the stomach of a cow in Bamako, for cleaning the water flowing through the dump in Accra, for closing New York City's legendary "Fresh Kills" landfill, now the highest point on the entire East Coast of the US, or for treating the lung infections of 150,000 waste pickers in New Delhi?

How dare we think about "cradle to cradle," when recycling is seen as a boutique element of managing the waste in rich countries, when cutting forests is subsidised and recycling paper is not, when even the most obedient EU citizens cannot manage to recycle 100% of their PET water and beverage bottles, or when urine, perhaps the most easily available source of phosphorus, critical to almost all agricultural processes, is prohibited in the agricultural value chain in many countries?

Even now, in the 21st century, there are many urban areas in the world where the only regular or reliable waste collection services (if they exist at all) are provided by illegal one-truck businesses run from people's homes; where adolescents and their small sisters and brothers see the dumpsite as playground and source of materials to sell for pocket money; where informal entrepreneurs who risk their health and safety to recycle are persecuted instead of praised, criminalised instead of commended; where the safest way of managing hazardous industrial materials is for workers to burn them openly and breath the toxic fumes? So, still a long way to go.

With less than 5% of plastic being recycled, much of the waste ends up joining the ocean vortices, either from direct dumping, river transport or via unsecured landfill. This has created enormous plastic 'gyres' of the Pacific, Atlantic and Indian oceans that contain and release toxic chemicals into the ocean. The Pacific Ocean plastic patch alone is twice the size of France. The UN estimates that marine plastic kills over a million seabirds and 100,000 mammals and sea turtles each year.

Electronic waste threatens human, animal and environmental health and the environment: In contrast to Rio Principle 14, 20 – 50 million tonnes of electronic waste is transferred to developing countries each year, much of it illegally. This has resulted in an influx of toxic waste and resulting contamination of land, water, and humans. Green design and extended producer responsibility have not been sufficiently implemented.

Shipbreaking, another phenomenon of waste dumping, today occurs mostly in yards on the beaches of South Asian countries as well as in China and Turkey. After 25 to 30 years ships are at the end of their operational life. These 'end-of-life' vessels are sold and dismantled to recover valuable steel. More than 90% of a ship's structure consists of steel. However, ships also contain large amounts of hazardous materials.

As thousands of South Asian workers, desperate for jobs at any cost, dismantle ships without protection, shipbreaking creates unacceptable levels of death, injury, work-related diseases and environmental pollution. This situation will be aggravated by the number of ships going out of service in the next few years following the global phase out of single hull oil tankers; the large estimated backlog of old vessels still operating because of high freight rates; and the general boom in shipbuilding over the last years.

Toxic wastes on board 'end-of-life' vessels are being freely traded without restraint in the global market place. The costs of ensuring that these wastes are recovered and disposed of without polluting and endangering human health are today being externalised to the workers and the environment in South Asian developing countries. This is illegal according to international law and in deep contrast to well established principles allocating the responsibility to the polluter, who in this case is the ship owner.

<http://www.shipbreakingplatform.com/dmdocuments/reports/offthebeach.pdf>

Constraints and obstacles

There is broad agreement that the current approach to managing solid waste is inadequate in many cities, particularly those in developing and transitional countries. A more correct statement is that it is inadequate in all cities, but in different ways. In Austria and Canada solid waste management is efficient at removing waste from urban areas and storing it for the future, because that is what a landfill is. Sweden and Japan are very good at transferring waste from one medium to another, by incinerating it and transferring residues to the soil and fine particles to the air. Egypt's Zabbaleen Coptic Christian community had a better idea: for decades they collected urban organic waste to feed to their pigs, and were pioneers in recycling plastics and other materials to industry. "Modernisation" of this system actually decreased recovery, and resulted in more materials going into "long-term storage." The city became dirtier, the Zabbaleen became poorer, and cradle to cradle moved a few leagues further away.

Worldwide, there are millions of individual-, family-, and micro private entrepreneurs who get their livelihoods from picking up the waste materials that show up in the empty spaces in their city, processing them, and selling them into the commodities value chain. Others are involved in repairing appliances, re-manufacturing, or marketing second-hand or repaired items. These people are in the informal waste and recycling sector, that is, their professions are unrecognised, their businesses are unregistered, and their activities are unseen. We don't see or acknowledge the contribution of informal recyclers because of geopolitical biases: there is a tendency to treat developing and transitional countries as imperfect or incomplete copies of an ideal system that operates in developed countries like Canada, Denmark, or Japan. Yet one can ask whether a system that designs, finances, supports and perpetuates burying waste in the ground is anybody's state of the art. It's time to take a different view, and respond to a growing global consensus that cities in low-income, middle-income and transitional countries need to take charge of the modernisation process and to develop their own models for resource cycling and maintaining a clean city: their own models with focus and approaches that fit their own conditions.

One of the main goals of SCP is to prevent waste, and design products that can be recycled and repaired. While many people think that rich countries in North America and Western Europe have all the answers, they are not necessarily on the front lines in terms of prevention and valorisation of the waste. In low- and middle-income countries, there are often a variety of formal and informal, public and private systems already operating, so the basis for a stable mixed system is already in place. What most low- and middle-income cities miss is organisation, specifically, a clear and functioning institutional framework, a sustainable financial system, and a clear process for pushing the modernisation agenda and improving the system's performance.

Because waste is getting a huge problem, it is getting profitable to get rid of it by illegal dumping and burning (cfr Napolitan mafia).

Challenges

There is now broad international consensus for what has come to be known as ISWM, i.e. integrated and sustainable waste management, a framework that was first developed in the mid-1980s. ISWM is a systems approach which recognises three important dimensions, which all need to be addressed when developing or changing a solid waste management system. The dimensions, shown in Figure 1, include:

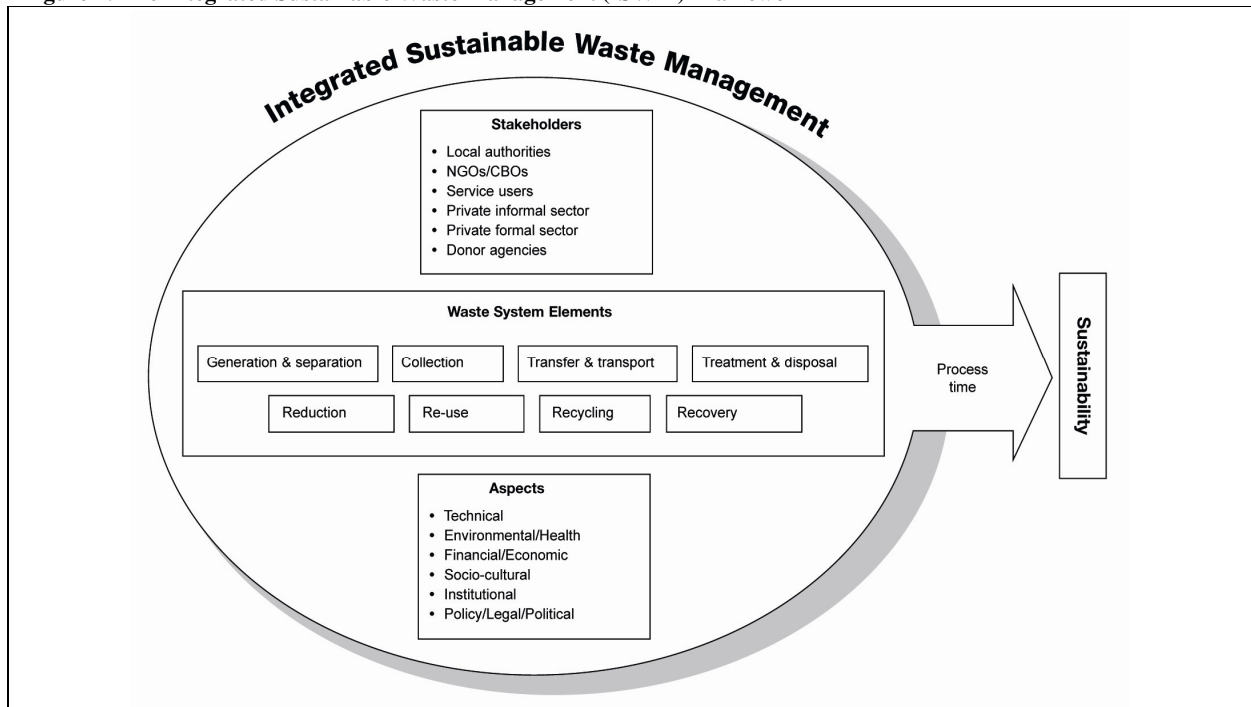
Stakeholders: The main 'recognised' stakeholders include the local authority (mayor, city council, solid waste department), the national environment and local government ministries, and one or two private companies working under contract to the municipality. Often unrecognised stakeholders include (female) street sweepers, (male) workers on collection trucks, dumpsite 'waste pickers', some of whom may actually live on or at the edge of the dumpsite, and family-based businesses that live from recycling. Other key stakeholders include the waste generators, the users of the waste management service provided by the city, including households, offices and businesses, hotels and restaurants, institutions such as hospitals and schools, and government facilities such as airports or the post office.

Elements: These are the technical components of a waste management system. Part of the purpose of using the ISWM framework is to show that these technical components are part of the overall picture, not all of it. The boxes in the top row all relate to removal and safe disposal, and the bottom row of boxes relate to 'valorisation' of commodities. Solid waste management consists of a variety of activities, including reduction, reuse, recycling and composting, operated by a variety of stakeholders at various scales.

Aspects: For a waste management system to be sustainable, it needs to consider all of the operational, financial, social, institutional, political, legal and environmental aspects. These form the third dimension in the lower box. The aspects provide a series of analytical 'lenses', which can be used for example for assessing the situation, determining feasibility, identifying priorities, or setting adequacy criteria.

'Integrated' in ISWM refers to the linkages and inter-dependency between the various activities (elements), stakeholders and 'points of view' (sustainability aspects). Moreover, it suggests that technical, but also legal, institutional and economic linkages are necessary to enable the overall system to function.

Figure 1: The Integrated Sustainable Waste Management (ISWM) Framework



TRANSPORT

Introduction

Transport links in many ways to economic development. Passenger transport can widen people’s perspectives of where to live and work. Goods transport enables trade, and hence enables larger-scale production and reaping of comparative advantages, both of which make economies work more efficiently.

But if too little or no transport is a problem for societies, too much of it is a problem too. We know all too well the inexorable rise in greenhouse gas emissions from transport, urban congestion, accidents, air pollution, and noise. Moreover, transport system development often exacerbates social inequality by prioritizing, explicitly or implicitly, car users over vulnerable road users. And last but not least, the global obesity epidemic has strong links to car use, an important element of a sedentary lifestyle.

Through time and across cultures, humans have travelled about 1.2 hours a day. Individuals might spend far more or far less, but on average people do not sacrifice more of their valuable time on transport. Centuries of development in transport technology and infrastructure mean that North Americans on average can cover about 80 km in that timespan, while sub-Saharan Africa is at roughly a tenth of that level. So speed is a very important, if not the most important, determinant of transport volume. It’s not only cars that make North Americans stand out – it’s also their much more prolific use on aviation. It’s indeed aviation that represents the next quantum leap for humanity in terms of kilometers that can be covered in an average day. And indeed the delays suffered from congestion does put a lid on transport growth – if all the world’s congestion were solved

today, tomorrow transport volumes would explode. The essence: people plan their journeys on the basis of the time they take, not on the basis of how far they are.

People do not just decide their travel on the basis of time, they also factor in costs.

Worldwide, on average about 10-15% of income is spent on transport. In the poorest countries where zero-cost walking is prevalent this percentage is somewhat lower.

Historically transport costs have fallen very quickly – the cost of car driving has about halved over the past half century, and that of air travel has fallen even more dramatically.

The reason for this is technological innovation and competition in the car and aviation industries.

The increase in speeds and disposable incomes on the one hand, and lower transport costs at the other hand, has led to a more than fourfold increase on globally averaged passenger transport demand between 1950 and 2005.

In summary, people try to maximise travel options within given time and budget constraints, and technology, speed and income developments have allowed them a fourfold increase in kilometers per head since 1950. Therefore, the most powerful ways to tackle transport demand, apart from outright restrictions, are policies that influence the speed and the cost of transport. For freight transport, similar observations hold.

Constraints and obstacles

Virtually exactly parallel with the worldwide demand for transport, demand for energy (almost all of it oil) and with it emissions of CO₂ have more than quadrupled between 1950 and 2005. CO₂ emissions remain stubbornly around 100 g/pkm. There has been no improvement in the energy efficiency of global passenger transport, despite all the technological innovation that has taken place in these 55 years.

There are essentially three reasons for this stunning conclusion. The first is that with growing incomes and lower cost of car and air travel, we have seen a huge modal shift towards less energy efficient modes of transport. Secondly, much of technological innovation in modes of transport has been used to increase power, speed and comfort, rather than to reduce fuel consumption and CO₂. Cars are much more powerful than before and can go much faster, same story for ships, and fuel consumption for aircraft increased threefold with the introduction of the jet aircraft in the early 1960s. And thirdly, with increased vehicle ownership occupancy rates have fallen.

It is cities where problems relating to too much transport are the most visible. Congestion, air pollution, noise and accidents related to transport have a very serious impact on the quality of life in cities worldwide, but especially in fast-growing megacities in developing countries. Globally about a million (!) of people die annually in road accidents, many of them in cities. Even more people die prematurely as a result of air pollution and noise from transport.

Global transport trends, both of goods and passengers, are not sustainable. The fast rise of the use of cars, trucks, planes and ships puts human health, the world's cities, and the planet for gigantic challenges.

Governments have a key role to play – for it's primarily governments that have the tools to correct unsustainable trends through regulatory, pricing, planning and education measures. There is no lack of successful examples, but for these to be emulated and improved upon, much partnership and consultation with national and international experts, NGOs and industries will be needed. Ultimately, political courage to take the necessary steps is decisive. The rewards will be huge.

Challenges

There is not one silver bullet solution for transport's many challenges. Every problem and every political culture requires unique approaches. One thing is clear however – the sum of

transport decisions by individuals do not add up to a sustainable transport system. It is clear that governments have a critical role as their policies as regards infrastructure planning and access, transport pricing, safety, and the like is pivotal. It can even be said that emissions, air pollution, noise and accident problems will not be solved by market forces as they are all classical 'external costs' that require government intervention to be solved.

Technical standards for vehicles and fuels.

Standard setting for cleaner and safer vehicles and fuels started in the 1960, with seat belts being amongst the first items to be regulated. Since then, regulations have piled up. Some examples of recent additions are new CO₂ standards (US, EU, South Korea), tyre pressure monitoring systems for cars (US, EU), electronic stability control and pedestrian protection rules for cars, lane departure warning systems for trucks (EU).

Many of these standards have been extremely effective. Lead has now been almost completely globally phased out from petrol, a situation deemed unthinkable only 10 years ago. Air pollution standards for vehicles have also proliferated, although in-use compliance of vehicles and the legacy fleet often still pose huge challenges. More recently, CO₂ standards have been agreed in the US and Europe that have caused automotive companies to drastically redirect their R&D and marketing efforts towards fuel efficiency, and they might also break the trend towards ever larger and more powerful engines.

Getting the carbon out of fuel has been proven one of the greatest challenges – biofuel policies have been discredited for being ineffective and sometimes even counterproductive, and other alternatives like electricity and particularly hydrogen seem even further away. Typically, the greatest challenge in setting standards is overcoming industry resistance. The vehicle and oil industries are among the most powerful vested interests in the world. It requires political courage and stamina to overcome their objections. Social arguments (keep vehicles and fuels affordable) and economic ones (keep the industry in business) often also play a role. But past experience shows little evidence for these claims – the long-term future of the industry is still a sunny one, many of the standards have spurred innovation necessary for long-term survival, and they have played an important role in protecting the vulnerable from the effects of vehicles use.

A disadvantage of standards is that by definition they hardly alter mobility patterns and offer therefore no 'integral' solution to transport problems.

Transport and fuel pricing strategies

Governments have a huge influence on the price of transport, through taxation of fuel, vehicles, and the financial treatment of public transport and aviation.

Fuel taxes are a simple and critical policy tool. Fuel prices affect overall transport demand, mode choice, as well as fuel efficiency of vehicles; therefore, a 10% rise in fuel prices in the long run reduces demand for fuel, and CO₂ emissions, by 7%. Some countries tax their fuel at the tune of \$1 per litre, while others subsidise it – which leads to petrol in Venezuela being about 100 times cheaper than in Turkey, and northern Americans burning three times the amount of transport fuel for each dollar earned compared with western Europeans. Often social arguments play a role in keeping fuel prices low. However, research in the area indicates that subsidizing fuel is often an inefficient way to improve the plight of the poor and targeted poverty relief schemes can be much more effective.

Some countries tax vehicle purchases, and some even based these purchase taxes on the environmental performance of the car, others don't. Purchase taxes have a huge effect on car ownership and hence use. Car ownership in Poland is comparable to that in Denmark, although Danes are more than twice as rich. The main reasons are the high car purchase taxes in Denmark; obviously also the excellent cycling and other alternative transport facilities play a huge role.

Most countries subsidise public transport, but at widely varying degrees.

Infrastructure investment

Infrastructure investment is often considered a miracle tool to boost economic growth. But the truth is more complex. Indeed, the first road or rail track connecting remote villages to markets further away might offer tremendous benefit in comparison with the cost. But the law of diminishing returns applies: the more infrastructure there already is, the more costly added capacity becomes and the lower its benefits.

Not only how much infrastructure is important, but also what type of infrastructure. The main choice here is not road versus rail – it's actually individual motorized transport versus alternatives: collective and non-motorised transport. For example, bus rapid transit systems can provide tremendous mobility advantages at costs often a fraction of metro or heavy rail systems. Cycling and low-speed mopeds are also attractive and low-cost sustainable mobility options. All too often priority is given to cars, which can easily make using a bike too dangerous to consider, and lead to a downward spiral of more people actually needing cars to get round.

Land use planning and cultural change

And here we see that all too often individual motorized transport, particularly in cars, is seen as a key indicator of progress, and collective alternatives are less fashionable, although intrinsically they are often much more efficient, particularly when space is scarce. In postmodern societies such as Japan cars seem to be losing their appeal as status symbols, particularly to young people, who find iPhones and Wiis more important. In many developing economies however, cars are the number one aspiration for the burgeoning middle class. Sprawling megacities are often built in a low-density way that inevitably spawns car dependence. Changing these public and political perceptions, promoting high-density building, road planning to limit impact on the environment and taking collective and non-motorised forms of transport more 'upmarket' are all absolutely key.

Tackling aviation and shipping

Aviation and shipping are often forgotten in discussion on sustainable transport – largely because aircraft and ships are much less visible in everyday life. But together they account for about a quarter of fuel use and greenhouse gas emissions from transport, and both modes are growing more quickly than other forms of transport. As we have seen, aviation is likely to take up a huge slice of future transport demand and CO2 emissions growth, because it allows people to clock up so many miles in the 1.2 hours a day they are prepared to spend on travel. Aviation is a hugely tempting mode for many governments because it requires relatively little infrastructure investment. But the same governments should be aware that when they invest in new airport capacity, they also invest in future dependence on long-distance travel with all of the associated impacts on oil use and the climate. The global community has a huge responsibility for finding a solution for the environmental impacts of these modes, but so far neither ICAO nor IMO (the UN aviation and shipping agencies, respectively) has delivered a credible way forward.