Frameworks for Analyzing the Links Between Globalization and Health

A Paper prepared for the Globalization, Trade and Health Group
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Introduction

Globalization describes a process by which nations, businesses and people are becoming more connected and interdependent across the globe through increased economic integration and communication exchange, cultural diffusion (especially Western culture) and travel. Contemporary globalization is characterized by increasing liberalization in the cross-border flow of finance capital and trade in goods and services. What distinguishes this globalizing era from previous ones is the scale of such movement (particularly finance capital), the establishment of binding rules (primarily through the World Trade Organization), the size of trans-national companies involved (several of which are economically larger than many nations or whole regions) and the apparent commitment of most countries to continue the project of global economic integration through increased market liberalization.

There are both potential health gains and problems associated with globalization. The potential health gains include, for instance, the diffusion of new knowledge and technology that can aid in disease surveillance, treatment and prevention. More fundamentally, increased trade and foreign investment through liberalization can improve economic growth and can be used to sustain investment in necessary public goods. Such growth, particularly in poorer countries, may reduce poverty, which, in turn, leads to better health.

The potential health hazards associated with globalization include a more rapid spread of infectious diseases, some of which are becoming resistant to treatment; and the increased adoption of unhealthy 'Western' lifestyles by larger numbers of people, for instance, an adoption of the higher fat "western" diet. However, liberalization does not always or inevitably lead to increased trade or foreign investment. Nor does such trade or investment always or inevitably lead to economic growth, poverty reduction or better health. Much depends upon pre-existing social, economic and environmental conditions within countries; and upon specific national programs and policies that enhance the capacities of citizens (such as health, education and social welfare programs). Finally, economic growth relies upon finite and rapidly diminishing natural resources, and produces toxic emissions with both direct and indirect human health effects.

Health researchers recognize the need to better understand the ways in which contemporary globalization can lead to improved health for all, especially for the poor. This requires expanding the global health research agenda beyond a disease-specific focus to one that also examines the social, environmental and economic contexts that partly determine the incidence and persistence of many diseases (Labonte and Spiegel, 2001); and to understand how these contexts shape health opportunities and behaviours at different levels (supranational to household), over the lifespan and even across generations. These contexts are themselves being increasingly shaped by international financial institutions (World Bank and International Monetary Fund) and global trade rules (World Trade Organization), and are also creating health effects that are increasingly global in scale.

A large literature on globalization and health is rapidly developing. Much of it is theoretical, some of it is empirical and all of it is partial with respect to the complex pathways through which globalization can influence specific health outcomes and

health-determining contexts. Several frameworks have also been developed in recent years to map this complexity, with similarly varying degrees of theoretical and empirical rigour, partiality or completeness. This paper, commissioned by the World Health Organization, is based upon a reasonably exhaustive review and critique of recent frameworks of globalization and health, or health-determining contexts. The search methodology is described in Appendix One. Appendix Two provides an annotated bibliography reviewing each of the frameworks. This paper provides an overview of the findings, based partly on the inquiry's terms of reference:

- ◊ Definition or conceptualization of globalization
- ◊ Comprehensiveness of framework
- ◊ Theoretical and empirical support for framework
- ◊ Usefulness of framework for future research, policy or programmatic planning

The paper begins with a discussion of the role and value of frameworks, and then raises a few interesting points about framework strengths and weaknesses based upon our review. We then elucidate a composite of the different framework categories and elements we encountered, discussing some of their known or theorized relationships to health outcomes. The full framework is explicated in Appendix Three. We conclude with a brief synopsis of key points useful in the future development of analytical frameworks, and how frameworks might be used to improve research into the multiple pathways by which globalization processes influence human health.

The Role and Value of Frameworks

Any framework is simply a modelling effort to render complexity into something more manageable and understandable. Frameworks are never comprehensive, and how frameworks organize complexity is determined by their purpose. Some frameworks are intended primarily for introductory or educational purposes while others are intended to identify specific relationships that can be tested empirically. A few frameworks represent efforts to map vast territories populated by complex and contested constructs. Often, the same framework serves multiple functions that may even be unspecified by its creator(s). Any critique and comparison of frameworks needs to take into account their intended purposes.

Few comprehensive, explicit frameworks exist that delineate the pathways between globalization and health. By explicit, we mean graphic, visual representations of concepts, contexts and pathways that link globalization to health.[1] The most comprehensive framework is the one developed by David Woodward and colleagues at the WHO (Woodward, 2001; Woodward, Drager, Beaglehole and Lipson, 2001). This framework forms a reference point for all of the others in our study. There are many more partial frameworks representing the particular disciplinary or sector interests of their creators, e.g. physical environment, social environment, economic growth, health care services. A majority of these, which are also amongst the more sophisticated and empirically based, examine links between globalization and the

[1] Many researchers and analysts have implicit frameworks embedded in their text (i.e. what they choose to study or comment upon) that are never visually explicated. We include only a few key implicit frameworks in our assessment.

physical environment. This likely attests to the stronger and longer presence of environmental concerns in globalization fora. Environmental frameworks, however, tend to underemphasize social dimensions (e.g. Conway, 1998; Commission for Environmental Cooperation, 1999), restricting their foci to simple measure of poverty or income but often excluding social policies or social actors from their analysis. Social frameworks, in turn, underemphasize environmental dimensions. Cornia's (1987) selected inputs in his framework, for example, are ones most likely to determine child welfare (his outcome of interest), however, the environmental pathways are under-developed. National adjustment policies that lead to increased cash crop production and export could push poorer rural families onto less arable land, affecting food security, biodiversity and water (access, quantity and quality) over the medium and longer-term with serious effects on child welfare.

Given the diversity and multiplicity of frameworks, is there any value in assessing them? The simple answer is to create a more delimited number. Barbara Starfield, in an essay on population health frameworks, argues for the value of working from a smaller range of such frameworks:

> Common frameworks enhance the likelihood that the results of research studies can be interpreted in a policy framework. When studies use the same framework, differences in results will suggest the possible mediating or compounding role of previously unidentified factors that need to be considered in subsequent research (Starfield, 2001; p.552).

To paraphrase, research (or research synthesis) using a smaller number of frameworks is more likely to generate findings that can be translated into policy 'so what's?'[2] It is more likely to generate novel and important questions requiring new empirical answers. The absence of an analytical framework makes it more difficult to adjudicate the full range of positive and negative affects of globalization, and particularly trade liberalization, on health outcomes or health-determining contexts. This leads to a situation where proponents and opponents make claims that are more ideological or theoretical than empirical (Mediterranean Commission on Sustainable Development, 2001). At the same time, of those empirically derived frameworks we reviewed, the authors acknowledge that few of the linkages they purport have been empirically tested. They attribute this, in part, to a lack of a "satisfactory and generally accepted framework for measuring the relevant variables," and argue a need for further research not only to measure the linkages, but also "to establish an analytical framework for doing so" (Costella, Watson and Woodward, 1994); and so the argument for theoretically sound and empirically-based frameworks comes full circle.

A framework (or set of frameworks) does not imply a single study, nor are they generally derived from a single study. Rather, as many of the papers reviewed in this project contend, the links between globalization and health (or environment) are complex, contingent and often indirect. Costella, Watson and Woodward (1994), for example, advance their series of frameworks specifically to challenge the narrow

[2] We do not assume a strong or direct link between research and policy, a field of inquiry generating vast quantities of its own frameworks, theories and evidence. Suffice it to say that the fewer the organizing principles underpinning frameworks – hence, the fewer frameworks in widespread use -- the easier it is to develop evidence-based, policy-relevant arguments.

outcomes focus of World Bank studies on the health effects of structural adjustment programs. Rather than attempting one simple correlation between adjustment and health outcomes, they argue that more detailed analyses of each of the linkages need to be made. Frameworks are helpful for generating case studies *ex ante* or assembling existing research *ex post.*

Strengths and Weaknesses in Framework Design

Our framework review disclosed several design strengths and weaknesses. These are detailed in our critique of each of the individual frameworks (Appendix 2). A brief synopsis follows.

Woodward's (2001, et al 2001) framework, we have noted, is the most comprehensive encountered in our search. Its strength lies in its detail, which is particularly useful for framing research questions and/or identifying required data sets. This strength, however, is a weakness if the framework's intent is to communicate with policymakers, the general public or even researchers less intimate with the nuances of the multiple pathways linking globalization and health. A good framework appears to be one that can be layered, moving from the simple to the complex; and which also allows for sub-division in order to establish more detailed linkages. Many of the more comprehensive, and empirically based, frameworks, such as the one developed by Costella, Watson and Woodward (1994) use such a layering approach.

Several frameworks, curiously, are not explicated in the accompanying text (e.g. Casas et al, 2001; McMichael et al, in press) but seem to be presented more as a heuristic than a rigorously constructed model. We pay less attention to these frameworks since it is hard to adjudicate their value, much less the empirical or theoretical base upon which they rest. More useful ones are those that have been used in some type of study, theoretical or empirical, although as already noted many of these conclude that there is little empirical evidence or analysis that have tested the linkages their frameworks present.

Some frameworks, though with acknowledgement, focus only on pathways demonstrating the *negative* effects of globalization on the outcome of interest, for example, Conway, 1998, where biodiversity is the narrowly defined outcome. A good framework needs to incorporate elements that can accommodate both positive and negative relationships to avoid the ideological or theoretical bias alluded to by Antipolis (Mediterranean Commission on Sustainable Development, 2001). While several frameworks refer to "governance" and "public goods" or "global public goods," these terms are neither well defined nor operationalized.

Many frameworks also do not include people as social actors who are able to influence public policies, social norms or macroeconomic contexts. Perhaps significantly, frameworks that do include people as social actors, usually identified as community organizations and civil society mediating between globalization and health, environment or human welfare outcomes, tend to be those developed by non-governmental organizations. The absence of social actors relates to another glaring omission in most frameworks: The lack of any effort to incorporate analyses of social power relations. For instance, few frameworks incorporate gender analyses into the relationship between globalization and health (notable exceptions are Rico, 1998; and

Woodward et al, 2001); even fewer still make any mention of ethnic and racial stratifications/inequalities, apart from a few casual references to migration. Rico's (1998) is the only framework predicated on locating gender roles and power relations throughout differing social levels. The main contribution that her analysis provides is that simply including gender in a causal relationship with globalization (and especially when only at the household level) reduces the reality of women's experiences. Women's experiences are complex and multifaceted; they are determined by women's socioeconomic status or degree of access to power within a country. For some countries, educational opportunities are limited for women, which will have direct bearing on women's ability to affect change. Explicit within both her text and framework is the underlying importance of the issue of power. The ability of people to develop environmentally friendly programs is determined by their relative control over their life situation. For women this is paramount. Women's experiences and roles not only shape their relationship to the environment, but are also affected by the realities of social stratification and participation in system of production, and ethnicity. Ultimately women's behaviours, migration patterns, and participatory power are affected by gender constructs. Women's ability to affect policy, for instance, is dependent in part on their access to political decision-making. The inclusion of participatory democratic processes also provides an insight into the means by which decisions are ultimately made.

Admittedly, incorporating social power relations into a framework is difficult, as there are many dimensions to power besides simply domination (force) or exploitation (Labonte, 1996). Proxy measures of power relations may entail some of what we describe as "political systems and processes" and "pre-existing endowments" in our section discussing Framework Elements, below.

A notable exception to this conceptual vacuum is work undertaken by the World Wildlife Fund. One framework category developed by Iannariello et al (2000) describes elements of a "political sphere" that mediates between macroeconomic policies and environmental outcomes. These elements include environmental agencies, civil society groups, international treaties and environmental laws that might influence environmental and political decision making, as well as the political power of different groups, funding levels that are available and degree of enforcement of existing regulations. Reed and Sheng (1997), in an earlier paper, developed a model of what they called "a political economy of poverty," which regards poverty less by neo-classical concerns with income level and wealth (e.g. World Bank dollar/day), and more by power relationships and those institutions that sustain them, and that create competition between social groups over resources and their allocation. The political economy of poverty is further theorized to influence environmental stress and polarization at three different levels, indicative of the measures they use to gauge relative power/powerlessness:

- ◊ local level influences (e.g. lack of access to land of other productions, lack of access to environmental assets and lack of influence over political and juridical systems)
- ◊ national influences (e.g. tax laws, budgets, national investments, regulatory regimes and public credit programs, which the authors contend often favour the privileged over the poor)

- ◊ international level influences which align social classes and groups against the poor (e.g. trade protectionism in rich countries, deteriorating terms of trade and capital flight)

While these frameworks are concerned with environmental outcomes, the WHO recently noted the role of power in mediating globalization and health impacts:

> Infectious disease rates are not simply a matter of poverty or lack of sanitary conditions, but also of power relations and trade-related structures that may push people into sustenance agriculture on marginal lands, worsening food insecurity and hastening environmental degradation (WHO Commission on Macroeconomics and Health, 2001).

It may be difficult to explicate dimensions of power within a framework; however, it is possible to ensure that frameworks incorporate elements indicative of power relations. Research, in turn, can utilize a number of potential measures or indices, such as the gender empowerment index, measures of democracy and citizen participation or compliance with various United Nations covenants or declarations.

An important issue in any framework development is balancing comprehensiveness and feasibility. Comprehensiveness, in the absence of available data, is not necessarily a virtue. Even with partial and fairly precise frameworks, such as Conway's (1998) model of macroeconomic policies and biodiversity effects, there were (and still are) significant data constraints. In Conway's case, this included data allowing a life-cycle analysis of products that might impact biodiversity (the core concern of the study), as well as data on the economic impacts of trade measures (e.g. actual trade policies, trade-related economic policies, product service exports and imports and so on) that would need to be considered in any globalization and health study. Still, Conway concludes, "despite the difficulties, and even with the knowledge that the results will not be perfect, governments realized that even a partial picture is better than no picture at all" (1998, p.34).

Finally, frameworks are inconsistent in their use of directional arrows. Some frameworks eschewed arrows altogether. This may accurately reflect the contingent and dynamic interplay of social elements from global policy-making to people's lives, but it is not helpful for generating research questions, comparing policy options or otherwise deciding upon new courses of action, such that heath or any other desired set of outcomes is positively affected. Other frameworks organized their elements hierarchically with one-way arrows flowing down, typically from the broadest macro-element (e.g. macroeconomic policies) to individual health outcomes, or the household level. The value of single-tailed arrows is that it implies a causal direction that can be tested. The weakness is that, in the human arena of social discourse, intercourse and action, causality is multiple, iterative and cyclical. Several frameworks attempted to model this by using two-tailed arrows everywhere. This creates a problem similar to frameworks avoiding all directional arrows. If everything connects to everything else, and feedback is continuous, there is no way to frame questions or undertake debate that would prioritize some actions over others. The difficult resolution, adopted by only a few frameworks, is a system in which some arrows are unidirectional (indicating little or no feedback effects), others are bi-directional, and each arrow is weighted in some way (line thickness, solid vs. dotted)

to indicate the strength or directness of the putative effect. This is the preferable use of arrows, but it also requires the greatest effort in synthesizing existing research linking each pathway, continual refinement as new research findings are generated and some narrative qualifications addressing the inevitable disputes that arise when different researchers, using different research methods, variables or analytical techniques, produce contradictory findings.

Summary

A "good" globalization and health framework is one that is comprehensive, yet also layered so that it can also be simplified for policy and public communication purposes. It is supported by theory, empirical evidence or, at least, argumentative text. All of its elements are defined and/or operationalized. The framework incorporates elements indicative of both positive and negative globalization/health effects. It identifies people as social actors, and the elements of differing levels of the framework accommodate an analysis of the social distribution and use of power, for instance, by incorporating gender and race as important analytical and conceptual elements. Most, if not all, elements have data available, or such data could be reasonably obtained. New elements lacking current data sources are only introduced because there is convincing theoretical argument supporting them. The use of directional arrows is carefully considered, based on the weight of evidence and significance of the effect.

Defining Globalization

The first issue we confronted in our framework assessment is the concept of globalization. Globalization remains a contested construct with broad agreement on what it represents but little agreement on what aspects of it can, or should, be measured. A surprising number of frameworks (indeed, the majority we reviewed) do not specify what they mean by globalization, or define it in vague or imprecise ways. Some offer tautologies, for example, the OECD's *Environmental Outlook Report* (2001) which defines globalization "as a process in which economic markets, technology, and communications gradually come to exhibit more 'global' characteristics and less 'national' or 'local' ones." Other framework architects offer more carefully considered definitions, which group under three broad headings: macroeconomic policy changes; trade liberalization, agreements and/or flows; and theoretical constructs.

1. Macroeconomic Policy Changes

Framework references to globalization as macroeconomic policy changes take three forms. Many frameworks specify changes in monetary and fiscal policies, privatization of public goods and liberalization (e.g. Conway, 1998; Cornia and Court, 2001; Labonte, 2001; Woodward et al, 2001). A few others subsume these and other policy effects under the theoretical umbrella of neo-liberalism (e.g. Lynch, 2000; Tarlov, 2000). Others specify the policy changes associated with the structural adjustment programs (or macroeconomic adjustment programs) of the World Bank and International Monetary Fund (e.g. Haddad and Mohindra, 2001; Costella, Watson and Woodward, 1994; Iannariello et al, 2000; Pinstrup-Andersen, 1987).[3] These include international demand, protectionism, terms of trade, capital flows, interest rates and lending conditions and national adjustment policies, all of which bear upon domestic economies and national adjustment policies. Occasionally, macroeconomic policy changes are seen as resulting from, rather than causing, political decision-making (e.g. McIntyre and Gilson, 2001), although this relationship is obviously iterative.

2. Trade Liberalization, Trade Agreements and Trade Flows

Several frameworks simply use trade flows to represent changes in globalization, which is seen primarily as increased "free trade" (e.g. Mediterranean Commission on Sustainable Development, 2001; CEC, 1999; Conway, 1998; Kirkpatrick and Lee, 1999; McCulloch, Winter and Ciera, 2001; Nagarajan, 1999). Few extend this emphasis on trade to include an analysis of trade policies (e.g. tariff reductions, export subsidies); indeed, several framework developers argue that it is much more difficult to incorporate trade policy analysis within research studies (e.g. Conway, 1998). This is a point similarly made by Rodriguez and Rodrik (2000), although they argue that two simple measures (average import tariffs and average coverage of non-tariff barriers) could be used to indicate a country's implicit trade policy. Most framework authors regard trade agreements as a driving force in increased trade flows. Only a

[3] An earlier conceptualization of globalization combines both general and specific macroeconomic policies as elements of the 'world economy' (Cornia, 1987), incorporating international demand, protectionism, terms of trade, capital flows, interest rates and lending conditions, although this terminology has not appeared in any recent texts.

few distinguish the potential health impacts of trade liberalization from de-regulation of global finance markets (e.g. Labonte, 2001; Cornia 1987, 2001; Woodward et al, 2001). The majority of empirical studies use measures of trade flows as their independent variables in assessing the health, environmental or nutritional impacts of globalization.

3. Theoretical Conceptualizations

Many of the frameworks defining globalization in macroeconomic terms are implicitly theoretical, usually by dent of critiquing conventional economic theories of the growth/poverty/inequality relationship, or the benign 'invisible hand' of markets. Others are more explicit in identifying and assessing key tenets and assumptions of neo-liberal economic theory for their health impacts, i.e. privatization, de-regulation, minimal welfare provision and trade liberalization. A few depart from an economic theoretical default to attempt new conceptualizations of globalization that locate globalizing phenomena historically and identify its differing dimensions (e.g. Lee, 2000a/b; 2001). Lee argues that globalization influences human interaction, and hence health, through three dimensions: spatial (shifts in experience of physical space via travel and communication), temporal (increased rate of acceleration in the flow of information, goods and people via technological change) and cognitive (shifts in knowledge, attitudes, beliefs, norms and cultural identities via 'globalizing forces,' which include civil society and emerging new forms of governance as well as increased economic integration). 'Global' health differs from 'international' health because, as Labonte and Spiegel (2001) similarly argue, the phenomena under study are not simply national or domestic events that spill over borders, but are 'inherently global' in both cause and effect. Spiegel (2002) adopts a similarly 'new' theoretical stance on globalization, defining it as encompassing the flow of people (ethnoscapes), the export of technology (technoscapes), global capital transfer (finanscapes), mass media images (mediascapes), and images invested with political-ideological meaning (ideoscapes).

Riviere-Cinnamond (2001) provides another interesting theoretical discussion of the concept of globalization, based on the concepualization of globalization developed by Jan Art Scholte. Scholte identifies five different concepts of globalization:

1. Internationalization, which refers to the increased interaction an interdependence between people in different countries.
2. Liberalization, the removal of regulatory barriers on the free flow of capital goods and services between nations.
3. Universalization, meaning broadly that differences between people and places are eliminated.
4. Westernization, referring to a process of homogenization in which the world becomes more western, modern and American.
5. De-territorialisation, or the growth of supra-territorial relations.

Both Riviere-Cinnamond, and apparently Scholte, reject the first four concepts of globalization as offering anything new. Other analysts would argue, however, that internationalization and liberalization, while encountered in previous eras, are qualitatively and quantitatively different today, in large part because of the growth of supra-territorial relations.

Summary

Theoretical concepts of globalization are helpful for the depth they can bring to the interpretation of empirical research. All research is theory driven, whether or not the theories are made explicit, by virtue of the questions posed and variables assembled for analysis. Research invoking explicit theoretical models of globalization is, in a sense, more rigorous, for the explanatory assumptions of the researcher are more transparent. Theories, however, are inherently contestable and, with respect to globalization as a 'new' phenomenon, still emergent. A key challenge to theoretical conceptualizations of globalization is the degree to which they can be operationalized for research purposes. This is a point made by Tarlov's (2000) commentary on Coburn's (2000) earlier essay that argued that neo-liberalism underpins many of the economically based health effects we are now witnessing globally. Tarlov notes that "face plausibility…is far from proof or even reasonable evidence," although the framework he proposes from which such proof might be generated is at a level of generality that still precludes, at this time, the gathering of such evidence.

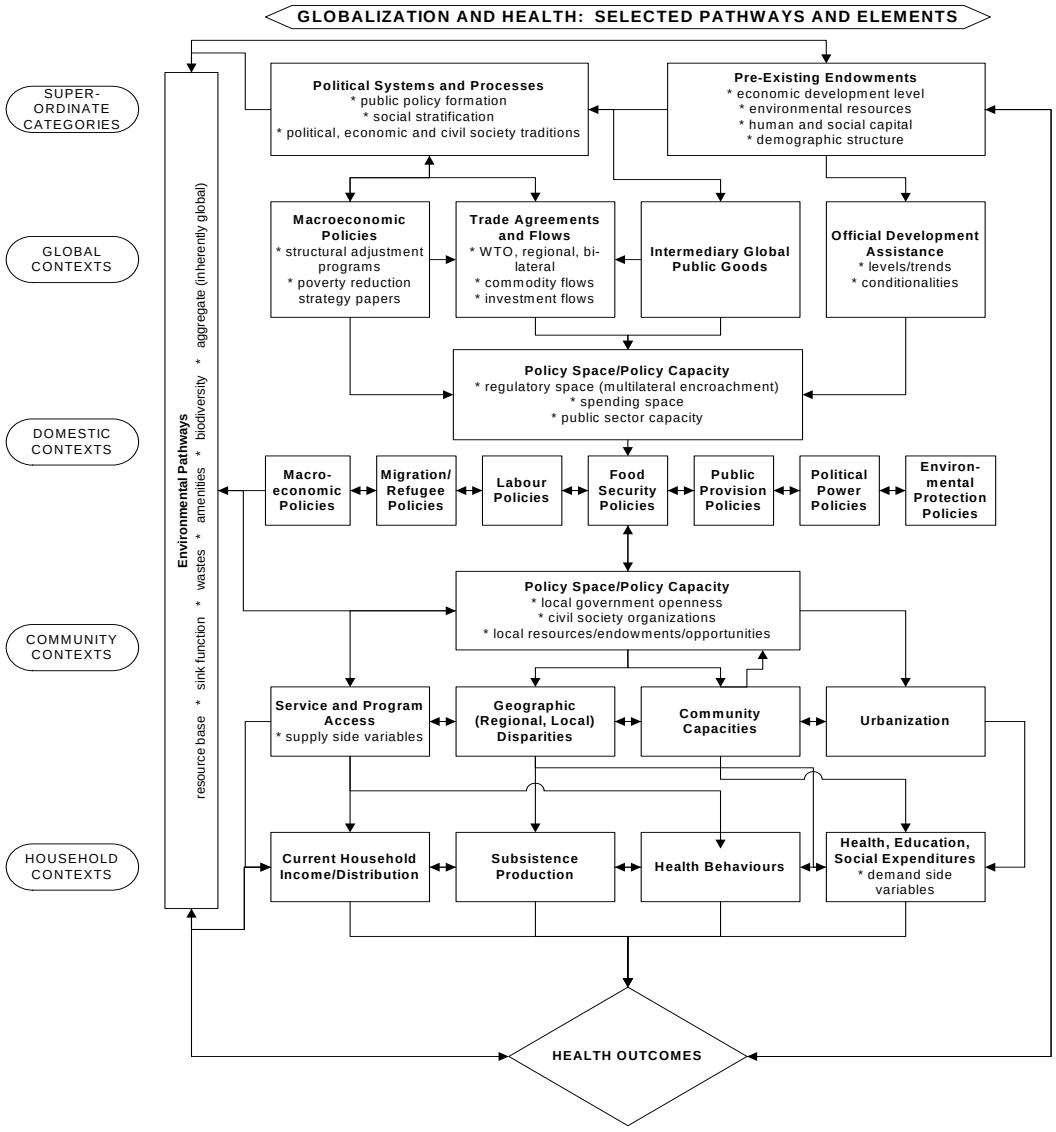
Theory is a dividing line between those concepts of globalization that reference macroeconomic policies and those that default to trade flows and agreements. The former begs theoretical consideration: What are the assumptions that underpin the policies? The latter accepts trade flows and agreement *prima facie* and assesses their impacts, without necessarily apprising the "drivers" of such flows and agreements. Any conceptualization of globalization needs to strike a balance between the two, where trade flows and agreements are considered as a sub-set of macroeconomic policies that, in turn, are embedded within (not always explicit) theories and theoretical assumptions.

Framework Elements

Most frameworks contain one or all of broad categories encompassing economic, social and environmental contexts. Most sub-divide these into sub-categories, and identify elements, potential indicators or sub-sub-headings within them. The plurality of identifying names does not make a summary of these elements easy. What follows is a descriptive synthesis of elements common to many frameworks. This descriptive synthesis does not include all of the elements incorporated by each of the frameworks. The diversity of interests and intents behind each of the frameworks we reviewed preclude the creation of any single "grand" framework. The categories and elements suggested below are neither fixed nor exhaustive, and some are more suggestive than discrete or easily measurable. They reflect the key pathways identified by the many frameworks we reviewed, and might best be considered the rudiments of a smaller set of frameworks to guide future research and policy analysis.

We have nonetheless organized these into a graphic presentation. This is presented in Appendix Three, in simplified, mid-level and high-level complexity models (the latter comprising potential measures). Figure 1 below presents the mid-level complexity model.

Figure 1: Mid-Level Complexity Framework: Globalization and Health



1. SUPER-ORDINATE ELEMENTS

Political Systems and Processes

Several frameworks begin by specifying elements of a super-ordinate context of "political systems and processes" that largely determine the macroeconomic policies and specific trade agreements that are the usual starting points for empirical research. McIntyre and Gilson (2001), in a case study of South Africa, describe political systems and processes as "political and socio-economic rights and decision-making practices" that characterize a particular state or nation. They argue that the many policy pathways through which national or global contexts influence health equity are *a priori* shaped by:

- ◊ acceptance of discrimination (on the basis of race, ethnicity or gender)
- ◊ definition of public need and attitudes towards privatization
- ◊ determination of public policy
- ◊ level of unionization
- ◊ accountability of public administration

The first two points reflect social attitudes, or discourses. These are shaped historically and will vary considerably by country and global region. They are also subject to hegemonic forces, i.e. through the dominance of certain discourses in popular media. With respect to globalization, a dominant discourse is that policies of trade liberalization, labour market re-structuring and privatization are necessary to global economic growth, and to enhance a nation's global competitiveness and gains from such growth. It is presented as a "TINA:" There Is No Alternative (Labonte, 1998). This opens a potentially illuminating area for global health research, for example, the extent to which the dominance of certain globalization discourses, discernible through content analyses of popular media, correlates with or predicts changes in public attitudes on discrimination, meritocracy, privatization and so on, using, *inter alia*, the World Values Survey database. Such research sets aside whether these policies are health damaging or health enhancing and asks simply: What is driving the acceptance or rejection of these policies?

The latter three points reflect different aspects of citizen or human rights, including democratic rights to participate in public policy formation and to "transparency" by governments. Lee (2000b) refers to this generically as democratic principles, arguing that these are becoming more commonplace globally. Others subsume it under a heading of "governance" (e.g., WHO Commission on Macroeconomics and Health, 2001; Labonte 2001; Lee 2000b) although the term is rarely explicated or rendered into variables, a point Lee acknowledges by identifying such specification as a future research priority. The level of unionization is an intriguing and important facet of the super-ordinate political context. Some research suggests that countries that have done better on a number of health and social equity measures post-globalization (primarily post-trade liberalization) are those with strong social democratic governments, generous welfare state provisions and higher unionization rates (Global Social Policy Forum, 2001; Gough, 2001), particularly those contrasting the social and labour market impacts of global market integration between different forms of rich world capitalism (i.e., the Nordic social democratic, European corporatist and Anglo-American liberalist models).

Lynch (2000) describes these political processes as "the political-economic traditions" that define certain nations or regions, noting, for example, that:

> It is no accident that the Nordic countries have lower income inequality than Britain, Australia, or the United states, and the role that welfare-state policies have played in blunting market-driven inequality is central to any interpretation of the link between income inequality and health (p. 1001).

Reflecting his own research interests, Lynch's framework draws particular attention to how these historically and culturally determined traditions influence the adoption of

neo-liberal economic tenets and policies and their subsequent impact on "social cohesion and trust," which he suggests declines under neo-liberal policy environments.

Conflict and political instability are other aspects of political systems and processes that could effectively determine the acceptance of, or compliance with, macroeconomic policies and trade regimes. Indeed, research is strongly suggestive that the relationship is two-tailed. Macroeconomic policies, in the form of structural adjustment programs emphasizing privatization and economic de-regulation, partly underpin and predict state-collapse and escalations in domestic and regional conflicts (Cornia and Court, 2001; Price-Smith, 2002). The extent of prior social stratification systems within countries, whether by class, caste, ethnic or wealth-based criteria, is also posited as an important prior condition influencing how macroeconomic policies are selected, implemented, and ultimately shape health outcomes (Diderichsen et al, 2001).

Another element identified by Woodward et al (2001) that might be considered both cause and effect of macroeconomic policies is "global public goods." The global public goods (GPG) concept is a relatively new expansion of the classical economic construct of public goods. Public goods are defined by dent of being non-excludable (use of the good is available to all, which includes most common pool resources, such as air, water, biodiversity, peace and even – the classic example often used to illustrate a public good - the traffic order created by traffic lights); and, in "pure form," non-rivalrous (my use of the good does not preclude its use by others, although most common pool resources do entail potential rivalry as supply diminishes, or efforts are made legally to convert them into private goods) (Spicer, 2001). A global public good is one that operates trans-nationally, and even trans-regionally. Sandler and Arce (2000) list seven basic GPGs for health:

- ◊ cure for disease
- ◊ new treatment regime for disease
- ◊ control of air and water pollution emissions[4]
- ◊ uncovering basic research findings
- ◊ monitoring disease
- ◊ disseminating research findings
- ◊ curbing epidemics

Global public goods are not *per se* a characteristic of political systems and processes. Rather, the existence and enforcement of regulatory frameworks for GPGs are an important factor in mediating the globalization – health relationship, although these are best positioned as part of, or alongside, the macroeconomic policy context. *A priori* to this context are a number of potential domestic variables, including government compliance with a GPG regulatory framework, and the degree of a government's support for, commitment to and participation in creating such regulatory frameworks.

[4] Elsewhere, Sandler (1999) identifies environmental GPGs that, though he doesn't specify as such, have indirect but significant health effects, including ozone shield protection and global warming prevention.

Summary: Political Systems and Processes

- ◊ acceptance of discrimination (on the basis of race, ethnicity or gender)
- ◊ definition of public need and attitudes towards privatization
- ◊ determination of public policy (degree of citizen participation)
- ◊ level of unionization
- ◊ accountability of public administration
- ◊ democratic institutions
- ◊ political/economic traditions (e.g. social welfare vs. welfare minimalism)
- ◊ social stratifications traditions (e.g. caste, class)
- ◊ presence of conflict/political instability (intra-nationally, regionally)
- ◊ history of government compliance with GPG regulatory frameworks
- ◊ history of government support for, commitment to and participation in creating GPG regulatory frameworks
- ◊ history of civil society organization (number, representativeness, transparency and accountability)

Pre-Existing Endowments

A related super-ordinate category, though rarely identified as such by frameworks, is pre-existing endowments. These describe the economic, environmental and human resources or capacities available to people within a country. Crude measures of pre-existing economic resources might include *per capita* income or wealth (such as the World Bank's four categories based on GNI, or Gross National Income, *per capita*), currency reserves or other monetary measures. Melse and de Hollander (2001) developed a theoretically more interesting, though equally crude, categorization. It identified three different economic development levels:

- ◊ agriculture and early industry
- ◊ industry and services (which entails measures of manufacturing capacity)
- ◊ information communication technology and economic globalization (which entails measures of existing global market integration, probably best captured by trade and investment flows, and access to information technologies)

While these levels are historical, leading to a future that is either "sustainable development or endangered global life support system" (Melse and de Hollander, 2001), they are also concurrent. Countries and regions can be predominantly slotted into one or the other. Without belabouring the choice of measures, the key point is that the level of existing economic development and global integration constitutes an endowment that, alongside political systems and processes, will influence every other element and pathway linking globalization to health.

Environmental resources, even though they are profoundly influenced by macroeconomic policies and trade liberalization, also constitute a pre-existing endowment. Countries facing deficits in water, arable land, fibre (forests), energy and other natural resources will experience the impacts of globalization (macroeconomic policies, trade agreements/trade flows) quite differently. Leach and Mearns (1991) argue that "environmental endowments" are an important and oft-overlooked

explanatory link in the poverty/environment relationship. In this relationship, poverty is commonly viewed as the single greatest determinant of environmental degradation. Poor people, for instance, may overgraze their herds or cultivate marginal land to ensure short-term gains, creating a downward spiral due of unsustainable practices that breeds more poverty. While there is some evidence for this claim, it is not compelling (Markandya, 2001). There is also evidence that poor people employ environmentally sustainable practices and that an analysis of environmental management practices needs to be part of the overall linkage between poverty and environmental change. Such management practices are dependent on the degree of local control (equitably dispersed and democratically accountable) that people have over environmental resources. Environmental endowments, then, consist of:

- ◊ the amount of actual physical environmental resources (i.e. environmental or physical capital)
- ◊ the environmental resource bundles that people have command over as a result of their ownership, their own production, or their membership of a particular social or economic group; and
- ◊ their ability to make effective use of those resource bundles, which in turn is influenced by components of: natural resource tenure, labour markets, gender (and gender rights), financial and physical capital endowments, and technology and knowledge (adapted from Leach and Mearns, 1991).

Human capital (traditional knowledge, new knowledge, education attainment, individual and collective skills or abilities) and social capital (social networks predicated on trust and reciprocity) are other pre-existing endowments. Some frameworks position these as dependent upon macroeconomic contexts and policies (e.g. WHO Commission on Macroeconomics and Health, 2001), which they are, however, they are also predictors of those contexts and policies and, more importantly, the eventual impact such policies might have on health. A country with a literate and well-educated populace that reduces public education expenditures or imposes user-charges will experience quite different outcomes in health, and in all of the domestic health-determining pathways, than a country still struggling to achieve the international Dakar Framework targets for universal primary education. Similar arguments can be made about social capital, which appears in several frameworks, usually undefined; although that construct is still subject to intense debates over its theoretical rigour and usefulness, and how it might be measured. An organized and engaged citizenry (civil society) is slightly more straightforward in importance, as a predictor of population health (Labonte and Laverack, 2001) and as a means to influence adoption of domestic policies that mitigate or exacerbate globalization's potential harms.

Finally, a country's demographic profile can be considered a facet of its pre-existing endowments. Leach and Mearns (1991) refer to "demographic processes" as mediators between economic and political processes and environmental processes, noting the impacts of population growth (and associated policies), distribution, resettlement, migration and employment opportunities on various resource depletions (water, soil) and pollutant emissions. The OECD (2001) similarly cites demographic characteristics, primarily population growth and distribution, as a key determinant of environmental health. Labonte (2001) cites the "ecological footprint" as a composite measure, arguing that:

> Resource consumption and pollution patterns amongst most OECD countries, and particularly the US, Canada and Japan far exceed their ecological carrying capacity. Through trade and investment, these countries appropriate life-sustaining resources from poorer countries. By one estimate, if all countries were to "develop" to the same consumption patterns found in the US, our species would require four more planets to exploit.

This estimate, he goes on to note, comes from the *Footprint of Nations* report[5] that calculates the hectares of biologically productive land per capita consumed by different nations. The US consumed 10.3 hectares per capita in 1993, compared to 4.3 hectares in Japan, 2.5 hectares in Costa Rica and 0.5 hectares in Bangladesh. Worldwide, current consumption outstrips capacity by 35%. The severity of these ecological limits, and how they are affected by population growth and movements, and by inequalities in North/South resource consumption, was the principle message of the 2002 World Bank Development Report (Elliott, 2002).

Two other aspects of demographics are important. One is the age pyramid, particularly as this affects labour markets and economic productivity/growth, and the ability of countries to care for their young, elderly and others through publicly financed programs. The crude division now arising globally are rich countries with excess elderly populations and poor countries, especially those affected by HIV/AIDS and other resurgent epidemics, with few adults or elderly and increasing numbers of orphaned children. Another is the sex ratio, with some evidence suggesting that a higher male/female young adult ratio is associated with an increased risk of internal conflicts and war.

> *Summary: Pre-Existing Endowments*
>
> ◊ economic development level (income, wealth, manufacturing capacity, technological access/sophistication)
> ◊ environmental (natural) resources (water, land, fibre, energy, other resources)
> ◊ people's (equitable, democratic) control over environmental resource bundles (asset distribution)
> ◊ people's capacities to make use of environmental resource bundles
> ◊ level of human capital development
> ◊ level of social capital development
> ◊ level of civil society organization and engagement
> ◊ age pyramid, sex ratio, excess population (ecological footprint), fertility rate

The selection of measures for items in each of these two super-ordinate framework categories may prove difficult. It is unlikely that one can find valid and reliable measures for these contexts that allow meaningful comparisons between countries. It is even less likely methodologically to control for all of these differences (including

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[5] http://www.iclei.org/iclei/ecofoot.htm

the impact of new and re-emergent diseases in many African and Asian countries) to make some determination of whether globalization (rendered below as specific macroeconomic policies, and trade/investment agreements and flows) produces a net health benefit or loss; and, if so, for which groups or populations within countries. The research task, instead, is better framed as developing a reasonable, and reasonably consistent, analysis of contexts and histories for national case studies, for which the elements in the two categories constitute a useful starting point.

2. GLOBAL POLICY AND ECONOMIC CONTEXTS

Macroeconomic Policies

Frameworks examining the impacts of globalization on health (or health-determining pathways such as the physical environment) usually start with macroeconomic policies and/or trade agreements and trade flows. These constitute the *de facto* if not also *de jure* vehicles by which globalization takes place.

i. Structural Adjustment Programs

Macroeconomic policies describe the general set of fiscal and monetary policies imposed upon or otherwise pursued by governments in recent decades. The most commonly examined are the set of conditions imposed by the International Monetary Fund and World Bank on indebted poor countries, collectively known as Structural Adjustment Programs, or SAPs (Mohan et al, 2000). SAPs are widely seen as intended primarily to ensure that interest payments on rich country bank and development loans, often undertaken recklessly and multiplied by subsequent currency devaluations and increased interest rates, could be maintained. The neo-liberal economic argument for this was ensuring that poor countries would be able to continue to attract foreign direct investment, posited as the necessary "engine" for economic growth. They are also precursors to the expansive trade liberalization agreements that now comprise the World Trade Organization, resulting in many developing countries actually being more liberalized than wealthy nations. According to Watkins (2002), 17 African countries have more open economies than the US and the EU.

While the requirements of such programs varied considerably and were rarely fully implemented, their five broad areas of reform included:

1. Allow free markets to establish prices (liberalization policies, including tariff reductions, removal of import controls and eliminating restrictions on foreign investment/capital markets).
2. Reduce state controls on prices so that prices are set by scarcity values (de-regulation, including monetary policies setting exchange rates favouring export industries, setting interest rates above inflation to reduce excess credit demand and/or reducing the money supply, and social policies eliminating minimum wage levels, reducing labour market rigidities and eliminating food price controls).
3. Divest resources held by the state into the private sector (privatization and contracting out).

4. Reduce state budget as far as possible (welfare minimalism, devolved responsibilities to local communities and cost-recovery/user-fees).
5. Re-orient state processes (bureaucracy, policies) towards enhancing development of the private sector (adapted from Milward, 2000).

Many of the frameworks reviewed were developed specifically to examine the impacts of SAPs on health and other development or environmental outcomes.

Cornia and Court (2001), for example, argue that SAPs have been much more important in negatively affecting their outcome of interest (income inequality) than has trade liberalization. SAPs are also associated with the erosion of labour market institutions (e.g. full employment policies, decreased minimum wage, wage differentials for new workers, dilution of workers' bargaining power, reduction in public sector employment and so on). Financial market liberalization has had the most pronounced effect on income inequalities, primarily through increased interest rates that hurt the poor, local producers and government spending (via higher debt servicing loads) the hardest, to say nothing of the economic crises incurred by currency, banking and stock market collapses. These new causes, in turn, underpin shifts in taxation (revenue) policies and consequent public spending (e.g. on education, health, environmental protection), which have become increasingly less progressive. For developing countries, this exacerbates the historic inequalities between rural and urban populations (which are often a proxy for inequalities between indigenous and dominant cultural groups), since:

> ...tax and pricing policies as well as public expenditure policies can have significant impacts on the distribution of opportunities and income between rural and urban areas (Cornia and Court, 2001, p.29).

Failure to buffer such inequalities could lead to massive social unrest, and even genocide; the authors cite the specific case of Rwanda.

Haddad and Mohindra (2001) similarly explore the impact of "macroeconomic adjustment policies" (their more inclusive term for SAPs, including adjustment policies undertaken voluntarily rather than as loan conditions) on supply of and access to health services. Their list of macroeconomic adjustment policies included monetary adjustment (reduction of money supply, increase in interest rate); fiscal adjustment (budget cuts, subsidies and changes in taxation); exchange rate adjustment; foreign trade adjustment (including the trade balance, reduction of tariffs and other measures); and wage and price adjustments (including freezing of wages, deregulation of prices and so on). Their research also included gender related measures (such as women's employment, health data expressed in terms of reproductive health status, infant and child health measures), and several contextual variables that could be considered potential indicators of categories or pathways linking globalization to health, e.g., schooling and literacy rates by sex, childhood school enrolment by sex, number of teachers and pupil/teacher ratios, population without sanitation or water supply, and percentage of poor population. The framework was applied in a comprehensive series of eight nation studies. Significant and specific policy relevant findings were generated for each of the eight nations, as well as a generic finding that macroeconomic adjustment policies result in "high inequalities in access to and utilization of health services, and the reinforcement of

risks of exclusions and barriers to access of the poorest by efficiency-oriented health sector reforms" (p.20).

Iannariello at al (2000), in a partial framework intended to guide Environmental Impact Assessments, usefully model ("scope") how particular SAPs (elimination of agricultural subsidies, promotion of agricultural exports and liberalization of agricultural marketing) might create both economic and social changes that lead to negative environmental impacts. The framework includes unidirectional pathways from *economic reform* (e.g. elimination of agricultural subsidies) to *anticipated response* (e.g. decline in domestic production) to *social linkages* (e.g. increased povery) to *anticipated response* (e.g. migration to marginal areas) to *environmental impact* (e.g. forest clearing/soil loss) to *possible (policy) responses* (e.g. rural poverty mitigation program) and *monitoring mechanisms* (e.g. poverty indicators, accelerated deforestation). Their series of nested diagrams is weakened by the absence of feedback arrows, a point we addressed earlier in a more general way. For example, while macroeconomic adjustment policies will have social effects that produce environmental impacts, these environmental impacts will feedback to the social level with some iterative and spiralling consequences. Nonetheless, there is a simple elegance to the framework that allows for empirical testing, and its categories would be helpful in the development of comparative case studies.

Pinstrup-Andersen similarly models and provides secondary evidence showing that adjustment policies "frequently include changes of particular concern to the poor (e.g. increasing food prices and declining government expenditures on social programmes), those effects can be severe" (p. 70). Adjustment policies are broadly defined as five types: monetary, fiscal, exchange rate, foreign trade, and wage and price. These vary somewhat from the nomenclature adopted by Mohan et al (2000), but not enough to warrant concern. Short-term negative adjustment effects include decreased nutritional status and negative domestic (gendered) distribution of income. Long-term effects for the poor extend to decreased economic growth and increased political instability.

Reed and Sheng (1997) posit that "macroeconomic imbalances" supersede macroeconomic policies as drivers of social and economic changes that, in their interest area, negatively impact the environment. These imbalances describe the weaknesses in national economies in the 1970s (slow growth, worsening balance of trade, inflation and high unemployment or "stagflation") that precipitated the drive to structural adjustment reform. (These imbalances also corresponded with a rise in neo-liberal economic orthodoxy, particularly in the Anglophone countries, the 1974 "oil shock" and deliberative strategies on the part of elite groups to systematically challenge Keynesian economics and the welfare state, on which the authors are largely silent, but not other critics; see Coburn, 2000; Lynch, 2000; and Tarlov, 2000). Reed and Sheng identify several ensuing macroeconomic and sectoral reforms that have corresponding impacts on prices and on a reduced role of the state. These changes, in turn, alter social relations and institutions in ways that increase social polarization and environmental stress. Social polarization itself is another source of environmental stress. Social polarization and environmental stress lead to increases in macroeconomic imbalances, and so the cycle continues. The framework they developed, unlike many others, arose from a synthesis of case studies, rather than created *ex ante* to guide such research. The case studies, conducted in Cameroon, El Salvador, Mali, Jamaica, Tanzania, Venezuela, Vietnam, and Zambia, showed a

general increase in poverty and income inequality, and pressures on natural resources (especially in the agricultural sector) after structural adjustment policies were introduced, and state regulation and subsidies reduced.

There have been many other attempts to model and assess the impact of SAPs on peoples' health and quality of life than those included in our framework study. A review of research on the health consequences of structural adjustment conducted for the Commission on Macroeconomics and Health (Breman and Shelton, 2001) found a preponderance of negative effects among 76 studies identified. A more even distribution of positive and negative findings existed among what the authors classified as "empirical" studies, a term that was never defined. This literature review is compromised somewhat by a selective and incomplete sample of studies which excludes many important ethnographic studies (e.g. the work of Schoepf 1998, Schoepf, Schoepf and Millen 2000, on AIDS in Africa) and other forms of field observation (e.g. Farmer 1999); as well as studies on broader health-determining pathways such as environmental degradation, gender roles, income distribution, public services other than health care, and so on. Even so, the CMH review determined that the impact of structural adjustments was almost singularly negative in Africa.

ii. Poverty Reduction Strategy Papers

While SAPs have disappeared as such, many of their macroeconomic elements are found in the "Poverty Reduction Strategy Papers" (PRSPs) launched by the World Bank and IMF in December 1999. PRSPs are already a condition for the HIPC (Heavily-Indebted Poor Countries) initiative of debt-relief and are increasingly regarded as conditions for bilateral or multilateral development assistance. Key elements of PRSPs include commitments to poverty-reduction, broad public participation and local government "ownership." These empowering tenets have garnered support for PRSPs from many multilateral institutions and development non-governmental organizations (NGOs). At the same time, several NGOs have expressed strong concerns that full PRSPs require a comprehensive "macroeconomic framework" that simultaneously incorporates "pro-poor" and "pro-growth" strategies, and that economic growth remains predicated on trade liberalization and privatization of "government holdings in production activities" (Jubilee South et al 2001, addendum to World Bank/IMF 2002). The UNDP, in its PRSP assessment, notes that advice on the requirement for a macroeconomic framework identifying fiscal and financing policies for poverty-reduction is weak, contains many unexamined assumptions and doesn't reference the importance of including an analysis of distributional impacts of macroeconomic policies (UNDP 2001, addendum to World Bank/IMF 2002). The World Health Organization goes further in analyzing serious gaps in existing PRSPs with respect to health (WHO 2001, addendum to World Bank/IMF, 2002). Amongst its major criticisms:

- ◊ PRSPs deal with ill health as a *consequence* of poverty, but not also as a *cause* of poverty, particularly with respect to the effects of cost-recovery or user-charges for health care services on the poor. Six of the ten PRSPs reviewed by WHO referred to the need to subsidize cost-recovery health services for the poor, but failed to mention any of the well-known failures

of such fee-exemption programs, despite these issues being raised in the public participatory documents associated with these PRSPs.

◊ The PRSPs do not deal with such important health system issues as governance (e.g. government doctors also working privately), and expenditure levels well below the minimum of $30 - $40/capita needed to provide basic primary health care; and there is no indication that the PRSP process is leading to any increased commitments in health or education.

◊ PRSPs deal only with health as an outcome of development, rather than a means of development. This prejudices investments in health as secondary to investments in economic growth (macroeconomic) policies.

Summary: Macroeconomic Policies and Elements

◊ structural adjustment programmes
- liberalization policies (e.g. tariff reductions, removal of import controls, elimination of restrictions on foreign investment/capital markets)
- reduced state controls on prices (e.g. monetary policies affecting exchange rates favouring exports, interest rates higher than inflation, elimination of minimum wage floors, wage freezes and removal of other labour regulatory 'rigidities,' elimination of food price controls)
- privatization of state productive assets (including contracting out)
- reduced state public expenditures to minimum (including devolved responsibilities to local communities, user-charges and other cost-recovery schemes)
- bureaucratic practices and state policies re-directed to enhance private sector growth

◊ poverty reduction strategy papers
- privatization of state productive assets
- increased trade liberalization
- cost-recovery for health, education and other social programs

Trade Agreements, Flows and Institutions

Trade liberalization is a sub-set of macroeconomic policies. Many frameworks, however, equate globalization solely with increased international trade and formulate their analyses around specific trade and investment agreements. This is particularly so with environmental frameworks. There is considerable disagreement, and conflicting empirical evidence, on the extent to which trade liberalization *per se* will improve or worsen health and health-determining social contexts (Cornia, 2001; Cornia and Court, 2001; Kirkpatrick and Lee, 1999; Labonte, 2001), with much depending on the pace of liberalization (UNDP, 1999), the availability of remedial or buffering public programs particularly in affected sectors of the domestic economy (Ben-David, Nordstrom and Winter, 1999) and development exemptions permitted under World Trade Organization agreements (Labonte, 2001; Hoeckman and Martin, 2001). There is much less disagreement that increased global trade will create negative environmental externalities through accelerated resource depletion and trade-

related energy consumption and greenhouse gas emissions (Mediterranean Commission on Sustainable Development, 2001; CEC, 1999; Conway, 1998; Kirkpatrick and Lee, 1999; Labonte, 2001; Melse and de Hollander, 2001; Reed and Sheng, 1997). Given the plurality of policy elements associated with macroeconomic adjustments, and the increasing centrality of trade and investment liberalization in policy discourse, it is useful to regard these two as separate, albeit interdependent, categories.

i. Liberalization and the Physical Environment

Antipolis, in research undertaken for the Mediterranean Commission on Sustainable Development (2001), modeled the future impacts of trade liberalization on the environment by drawing on seventeen national and regional case studies, assembled against a unifying framework. The study estimates several risks and benefits from trade liberalization in the Mediterranean basin, which is due to become a free trade area by 2010. The impact on traditional farming sectors (cereals and livestock) will be substantial and largely negative, with increased poverty and rural de-population, as well as loss of bio-diversity and deterioration in the landscapes. Economic benefits would accrue to the export sector in Mediterranean basin countries (primarily fruit and vegetables) but not without incurring negative environmental externalities such as increased pressure on water resources and increased pollution. The lower income on agricultural products will be hardest for the majority of small producers, which could increase pressure on marginal land to offset lower income with negative bio-diversity and other environmental results. Socially, there is increased risk of loss of social cohesion in the rural areas and of rural migration, which could worsen the environmental and social problems in towns along the coastline. Impacts on the industrial sector will include environmentally positive access to cleaner technologies at lower prices. Depending on consumer preferences in export markets, there may also be an incentive to comply with standards that are more respectful of the environment. Risks, however, will be in multiplication of "hotspots," especially in the coastal areas, increased overall volumes of energy and water consumption (the latter competing with agricultural water use), increased transportation and transport related pollution, and negative affects on employment in economic sectors currently protected.

The impact of trade liberalization on consumption patterns will also likely be environmentally damaging, including large increases in overall consumption, packaging, waste production and automobile use. Post-liberalization consumption patterns increasingly model unsustainable northern country patterns. There is also a post-liberalization shift away from cereals and grains and towards imported beef and other animal products. Such products are more environmentally demanding for the nutritional values created, and their excess consumption is associated with human health problems (obesity, heart disease). The study also notes several countries where earlier partial liberalization in the automotive industries led to dramatically increased per capita auto ownership and use, with a corresponding rise in fossil fuel emissions, air pollution related affects and increased motor vehicles accidents (e.g. Mexico, Morocco, Syria; UNEP studies found the same for India). Liberalization's positive contribution is the introduction of cars that are less polluting, but this gain is overwhelmed by the negative impacts of a sharp growth in the overall vehicle fleet.

Conway's framework-based study (1998) assessed how trade liberalization would affect biodiversity. Three pathways were identified, distinguished by being indirect, independent or policy-mediated:

1. Indirectly, through trade's primary effects on economic activity (product effects, which can have + or - biodiversity impacts; scale effects, which are generally negative due to increased resource depletion; and structural effects, such as technological innovation changing the efficiency and nature of economic activity which, as with product effects, can have + or - biodiversity impacts).

2. Independently, through conditions created by trade liberalization (e.g. rapidly accelerated cash economy, internationalized investment capital and spatial separation between producers and consumers) which lead to four strictly negative biodiversity impacts: intensified extraction of natural resources for export, intensification of monoculture, development and land-use pressure to service trade, and introduction of alien species.

3. Policy-wise, through direct trade rules-based restrictions affecting domestic policy (e.g. subsidies for environmental technology or biodiversity protection, beyond the one-time 20% allowed under WTO agreements, could be sanctionable); and through indirect competitiveness pressures leading to reduced environmental protection or to development in trade-intensive sectors (which could have + or - biodiversity impacts, although more likely to have the latter and especially in poorer countries).

The framework was tested in case studies of Papua New Guinea and Indonesia. Its elements closely cohere with those proposed by Melse and de Hollander (2001) and the OECD (2001). Its distinctions between primary, independent and policy-dependent effects may be hard to incorporate into a more encompassing framework (Conways's is very narrowly proscribed) but are helpful when framing research questions.

Kirkpatrick and Lee (1999), in their "Sustainability Impact Assessment" of trade agreements undertaken for the Commission of the European Communities prior to the failed Seattle WTO Ministerial meetings (1999), identified several pathways through which such agreements could impact the environment:

- ◊ commodity prices: with positive or negative affects on consumption and distributional implications with respect to equity;

- ◊ market access: with cheaper imports displacing employment and income gains for non-competitive domestic sectors, as well as increasing consumption of potentially harmful food, tobacco or other potentially health damaging products;

- ◊ income: on average, income should increase with trade liberalization, but the distributional affects of income growth remain a subject of research and policy contention;

- ◊ investment: capital market liberalization should attract increased amounts of foreign direct investment, although this includes the risk of short term speculative capital flows, and FDI is not proportionately or equitably invested in all regions of the planet;

- ◊ technology growth and productivity: with both positive (more efficient, less polluting technologies) and negative (increased resource extraction and product consumption) effects;

- ◊ employment and wages: related to income, with some sectors benefiting and others losing; and

- ◊ government revenue: with mixed results, of greatest concern to developing and least developed countries unable to replace their loss in tariff taxation with other forms of tax revenue.

These pathways were tested through interviews with key informant (researchers and other stakeholders) resulting in subjective assessments of potential benefit and harm of a number of specific trade agreements. Most of their findings were mixed, with both positive and negative effects, although negative effects tended to be more pronounced for developing and least developed countries. Negative effects were worse for all country clusters (organized as European Union nations, developing countries, least developed countries and "the world") under their "liberisation" scenario, in which agreement on all of the Seattle agenda items was successfully reached. This "liberalisation" scenario was achieved in large measure at the Doha WTO Ministerial meeting in November, 2001; but has since fallen into uncertainty following the collapse of the Cancún Ministerial meeting in September, 2003.

ii. Liberalization and the Social Environment

Kirkpatrick and Lee, though interested primarily in environmental impacts, do not exclude social impacts such as the effect that lower tariffs might have on government budgets, and the impact of cheaper imports on domestic manufacturing and employment. Tariff reductions have been particularly hard on developing countries. Between 1980 and 1997, as a percentage of total national taxes, tariff taxes fell from 48% to 23% in Jordan, 50% to 16% in Sri Lanka, and 39% to 12% in Botswana (World Bank, 2000). Few countries experiencing these tax declines have had the capacity to institute alternative revenue-generating sources and have not experienced sufficient growth in trade to offset the drop (Hilary, 2001). In the past decade alone, for 18 of the African countries for which comparative data are available, taxes on international trade declined from 33% of total tax revenue, to 30% (World Bank, 2002, pp.252-4). Aggregate data mask some wide variations. Cameroon increased its international trade share of tax revenue from 14% to 28% between 1990 and 1999; even steeper increases were posted by Cote d'Ivoire and Guinea. The Congo Republic, meanwhile, saw its international trade share of tax drop from 21% to 6%, and Mauritius from 46% to 26%. Tariffs still constitute a very large portion of overall tax revenue in many developing countries, compared to an average of only 4% for high-income nations (World Bank, 2002, p.255). Tariff reductions resulting from market liberalization have had, and will continue to have, a much harsher revenue impact on poorer countries.

iii. Liberalization and Competitive Pressures

It is harder to establish a single category or set of measures for what other frameworks describe as "competitive pressure impacts" on domestic manufacturing or policies. Labonte (2001) notes that:

> Many of the low GDP/high health countries (such as China, Costa Rica, Sri Lanka and the "exemplar" Indian state of Kerala) have, or had, relatively equitable income distribution, as well as policies supporting social transfers to meet basic needs, universal education, equitable access to public health and primary health care, and adequate caloric intake (Werner and Sanders, 1997). These pro-poor policies are now being eroded by trade liberalization. In Kerala, a media-developed Western consumerist culture, alongside tariff reductions, is rejecting locally produced goods for imported luxuries, weakening the local entrepreneurial base (posting to the 1999 World Bank Globalization Discussion Group). Over time, this will erode the State's ability to tax domestic wealth for purposes of income redistribution, gender empowerment, maternal/child health and other low wealth/high health outcomes. There is further concern that Kerala's subsidized essential food program, which covers 96% of the population and is a major contributor to child health, could be challenged under the national treatment rules of the General Agreement on Trade in Services (GATS).

Zambia provides another compelling example. In return for World Bank and IMF loans, Zambia opened its borders to cheap, often second-hand textile imports. Its domestic manufacturing, inefficient by wealthier industrialized nation standards, could not compete. Within 8 years, 30,000 jobs disappeared and 132 of 140 textile mills closed operations, which the World Bank acknowledges as "unintended and regrettable consequences" of the adjustment process (Jeter, 2002). Overall, 40% of manufacturing jobs disappeared in the past decade, and huge numbers of previously employed workers rely on precarious street vending. In the early 1990s, user charges for schools led to increased dropout and illiteracy rates. The current government is now seeking to undo most of these policies, including elimination of user fees for education, lower costs for public health care, a reintroduction of agricultural subsidies and support for domestic industries with a potential for growth.

Accounts of competitive pressures do not reduce easily to one category, or set of categories. Nonetheless, they present the "coal-face" of trade liberalization within many countries. Frameworks can include elements relevant to such analyses, but sector-specific case studies may provide the most illuminating detail.

iv. Liberalization and the Loss of Domestic Regulatory Space

There is an additional and increasingly scrutinized aspect of trade agreements: The loss of domestic "regulatory space" under certain agreements (Rao, 1999; Labonte, 2001). The OECD 2001 *Environmental* Outook Report, for example, posits that national regulatory capacity for the physical environment is increasingly influenced by international trade agreements. These can be positive to the environment to the extent that unsustainable subsidies are removed, but could also be negative "when the

ability of governments to enact and implement appropriate environmental regulations is undermined by the provisions of trade and investment agreements" (OECD, 2001, p.54). The WTO Agreement on Trade-Related Investment Measures (TRIMS), for example, prevents countries from placing performance requirements (such as requiring local content) on foreign investment. Such requirements have been used to benefit government officials or their families (cronyism), one of the arguments made in favour of their removal. But such requirements have also proven useful in the development of a viable national economy, and their removal benefits more investors from developed countries than people living within developing countries. The WTO Agreement on Government Procurement (AGP), as another example, requires governments to take into account only "commercial considerations" when making purchasing decisions, specifically banning preferences based on environment, human or labour rights. Currently a plurilateral agreement to which few developing countries have signed on, the WTO's 4th Ministerial Declaration (November 14th, 2001) commits member nations to negotiate a future multilateral agreement on transparency in government procurement. On the positive side, this might aid in preventing large-scale cronyism or abuse of public monies by corrupt officials. It could, however, also signal gradual erosion in the ability of national governments to give preference to domestic suppliers. The Agreement on Sanitary and Phytosanitary Measures (SPM) has also been criticized for encroaching on domestic regulatory space, even when the basic trade liberalization tenet of national treatment (treating imported products the same as "like" domestic products) is followed (Sullivan and Shainblum, 2001; Charnovitz, 2001). The SPM requires that a country's food and drug safety (sanitary and phytosanitary) regulations be based on a scientific risk assessment, even if there is no discrimination between domestic and imported products.

Domestic regulatory space is further, if indirectly, encroached by the costs of implementing WTO agreements. These costs are particularly harsh for least developed countries. A study by Finger and Schuler (2001) estimates that "for just three of the six Uruguay Round Agreements that involve restructuring of domestic regulations...the figures...come to $150 million. One hundred and fifty million dollars is more than the annual development budget for eight of the twelve least developed countries for which we could find a figure for that part of the budget" (p.129).

v. Liberalization of Capital Markets

Kirkpatrick's and Lee's framework (1999) also includes the social and environmental impacts of investment flows. Cornia (2001) and Cornia and Court (2001), amongst others, argue that liberalization in capital markets has had far more negative and very little positive impact than has liberalization in goods. Labonte (2001) cites an apocryphal account:

> [T]he Brazilian currency crisis of 1998…was precipitated by the greatest inflow and outflow of speculative capital ever experienced by a developing country (UNDP, 1999; de Paula and Alves Jr., 2000) caused, at least in part, by the de-regulation of foreign investment. The government lacked sufficient foreign reserves to stabilize its currency and was forced to borrow from the International Monetary Fund. The rescue package included the requirement for drastic public spending cuts, including a two-thirds reduction in Brazil's environmental protection spending. This led to the collapse of a multi-nation

> funded project that would have begun satellite mapping of the Amazonian rainforest as a first step in stemming its destruction. This destruction, in turn, may have a profound impact on climate change, with long-term and potentially severe health implications for much of the world's populations (Labonte, 1999); as well as more direct negative health effects on displaced indigenous peoples living in the region.

The recent 2002 World Summit on Sustainable Development commitment of the Brazilian government to set aside large tracts of the remaining Amazonian rainforest partly obviates the bleak assessment Labonte made in 1999 (Mitchell, 2002). It also indicates how actions in one pathway category (in this case, a government's commitment to a global public good) can mitigate the effects of actions in another (capital market liberalization).

Foreign direct investment (FDI) is often separated from portfolio or speculative investment, although there is still disagreement on how to define it for purposes of global monitoring of FDI flows. Foreign direct investment, frequently cited as the engine for economic growth, takes place mostly between North America, Europe and Japan, which together, with China, receive more than 90% of FDI. The rest of the world, with 70% of population receives less than 10%, with Sub-Saharan Africa receiving only 0.5% (World Bank, 2002, p.234). Despite the low proportionate flow, FDI still crowds out domestic investment in most African countries, which means that many countries' economies are now being driven almost entirely by foreign investors who may have little interest in the country other than how it might affect returns on investment (Abdou, 1999), a condition referred to as "compradorization". FDI has only been successful in creating employment in developing countries when it has been in very large amounts (e.g. Singapore, Malaysia, the Mexican *maquiladoras*), which precludes a fairer distribution of FDI amongst all developing countries; and such FDI generally takes advantage of low labour costs rather than developing new technological capacities in the host country, rendering the employment and its associated economic growth very fragile (Third World Network/UNDP, 2001, p.20). This begs an important research question of whether increased FDI is sufficient to remedy the pressing economic, health and human development needs of many of the world's least developed countries.

Even when FDI is substantial and in sectors aiding the development of local economies, capital mobility and transfer pricing methods used to minimize corporate taxation are hampering the ability of national governments to generate tax revenues from the profits earned. OXFAM estimates that over US $100 billion in potential tax revenue leaves developing countries for offshore tax havens each year, more than the total amount of aid (see Action Aid et al, 2001). This estimate is based on calculating for each nation the value of export-oriented economic production, applying average corporate tax rates to the residual profit and comparing the potential to the real amounts of corporate tax revenue. The Organization for Economic Cooperation and Development (OECD) is leading negotiations to regulate such tax havens, although it is meeting some resistance from the US. Transfer pricing, in which companies engage in intra-firm global trade with their own subsidiaries, is another dimension of global investment flows. Transfer pricing allows companies to earn the highest profits in countries with low tax regimes, and the lowest profits (or even losses) in countries with high tax regimes (Reinicke, 1998).

Summary: Trade Agreement Framework Categories and Elements

Trade Agreements

◊ WTO
◊ Regional (e.g. NAFTA, FTAA, EU Agreements, ASEAN, MERCOSUR)
◊ Bilateral

Trade Flows (Commodities)

◊ Actual flows
◊ Commodity specialization
◊ Trade in health-damaging products
  - o Tobacco
  - o Weapons
  - o Toxic products/waste
◊ Trade balance
  - o Changes in exports and imports
  - o Balance of payments
  - o Market share(s)
◊ Intra-corporate productive integration, concentration and market share

Trade Flows (Investment)

◊ Short-term (speculative) capital flows
◊ Currency and banking flows/disruptions
◊ Levels of FDI
  - o From where
  - o To where
  - o For what
◊ Tax transfers
  - o Transfer pricing (dependent on intra-corporate productive integration)
  - o Tax havens
◊ Foreign borrowing levels

Domestic Regulatory Space

◊ Reductions in subsidies to domestic industries
◊ Reductions in export subsidies
◊ Reductions in capital market controls
◊ 'Compradorization' due to FDI dependence

Domestic Spending Space

◊ Income from tariffs
◊ Tariff reductions
  - o Restrictions on quantitative restrictions

- Trade protectionism, wealthy countries
- ◊ Direct environmental remediation costs
- ◊ Costs of WTO compliance

Global Public Goods

Global public goods, or GPGs, as we have already argued, are not themselves a causal pathway linking globalization and health, except perhaps as a pre-existing global endowment. For research or policy purposes, Kaul, Grunberg and Stern (1999) have usefully identified as "intermediary global public goods" (IGPG), those institutions and rules established to ensure provision of the "endpoint" global public good. The Draft Framework Convention on Tobacco Control is an example of a specifically health-identified IPGP, although Fidler (2002) provides a non-exhaustive list of other GPGs for health, and their accompanying IGPG legal regimes:

Examples of Global Public Goods for Health	**Related International Legal Regimes**
Control of international spread of infectious diseases	International Health Regulations (1969)
Access to drugs and vaccines for infectious disease control	WTO Agreement on Trade-Related Aspects of Intellectual Property Protection (TRIPS) (1994)
Food safety in international trade	WTO Agreement on the Application of Sanitary and Phytosanitary Measures (SPM) (1994)
Occupational safety and health	International Labour Organization Convention C155 on Occupational Safety and Health (1979)
Control of the international flow of narcotic drugs and psychotropic substances	UN Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances (1988)
Conservation of the stratospheric ozone layer	Vienna Convention for the Protection of the Ozone Layer (1985) and the Montreal Protocol on Substances that Deplete the Ozone Layer (1987)
Control of international trade in hazardous substances and chemicals	Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989) and the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides (1988)
Reduction of transboundary air pollution	Geneva Convention on Long-Range Transboundary Air Pollution (1979)
Access to public health and health care services	International Covenant on Economic, Social and Cultural Rights (1966)

At issue from a research and policy vantage is what happens when there are conflicts between existing IGPGs. Many WTO trade rules, for example, conflict with multilateral environmental agreements, most of which are unenforceable but a few of which (e.g. the Montreal Protocol on Ozone-Depleting Substances) have trade

sanctions as potential enforcement mechanisms (Labonte, 2001). Even conceptually, there is disagreement with GPG definitional boundaries. Birdsall and Lawrence (1999) dismiss attaching labour and environmental clauses to trade liberalization agreements as a global public bad because it dampens economic growth in poorer countries more willing to accept poorer labour and environmental standards. Kapstein (1999) argues that labour standards and worker compensation linked to trade liberalization agreements *is* a GPG by virtue of increasing global distributive justice. The effects of IGPGs on health and health-determining pathways, in other words, may be positive or negative; and whether it is one or the other may even depend on the interpretive stance taken by the researcher or policy analyst.

Summary: Intermediary Global Public Goods

- ◊ Existence and details of IGPGs
- ◊ Enforcement powers of IGPGs
- ◊ Superordinate IGPGs (which one trumps when there is conflict?)

Official Development Assistance

Official development assistance (ODA) is rarely considered in globalization frameworks. Only Cornia's 1987 framework discusses it all. This absence could be warranted by the stagnation and then stunning erosion of ODA levels during the 1980s and 1990s, a trend scarcely reversed by the begrudging commitments at the recent Monterrey Conference on Financing for Development. These commitments by 2006 will see total development assistance rise to 0.39% of GNI (well below the older benchmark of 0.7%), equivalent to only $1/9^{th}$ the estimated amount required to meet just three International Development Goal targets of poverty reduction, universal primary education and infant/maternal mortality reduction (Denny, 2002). Despite the dependency ODA fosters, and its declining importance as a form of global capital transfer, it is still an essential element in many state program budgets amongst the world's poorest and least developed countries. Targeting of these countries for assistance is inconsistent, making it difficult for countries to plan sustainable infrastructures. Much of the aid is tied (requiring purchases from the donor country) or in the form of technical assistance (requiring employment of donor country nationals, often at salaries exponentially higher than would be required if locals were hired). Much of it, especially in health and education, does not go to "basic" services benefiting the least well off, but to technically advanced services benefiting a smaller number of elite groups. Increasingly, ODA is being tied to conditions associated with Poverty Reduction Strategy Papers (PRSPs), some of which may have health-harming effects.

Summary: Official Development Assistance

- ◊ Levels/trends
  - o To what regions
  - o To what sectors
  - o Basic/non-basic ratio
- ◊ Tied/untied ratio
- ◊ Technical assistance ratio
- ◊ Conditionalities (e.g. PRSPs)

3. DOMESTIC PUBLIC POLICY CONTEXTS

Most frameworks are organized hierarchically, tracing the links between supranational phenomena to national settings and, eventually, to groups, households and individuals. There is a longer, stronger and more robust history of mapping pathways linking national policies to health outcomes, through different social and physical environments and at a variety of geographic scales (e.g., regions, local communities, households). Accordingly, we spend less time elaborating these points. There is a premise, however, that public policies determine the ultimate allocation of opportunities and resources within a political jurisdiction. We describe these as domestic, rather than national, policies, since most countries have a complex layering of policy-making rights from national to community levels. No single framework can capture these often-interdependent levels of policy-making authorities for all countries. There are, nonetheless, some generic categories, which we identify below. These policy categories also imply the nature of the outcome measures one would use in researching the relationship between globalization and health.

Domestic Policy Capacity

This descriptive category refers to the ability of public sectors to engage in policy development, and the extent of public engagement in it. Domestic policy capacity would embody elements of the super-ordinate category of "political systems and processes," and has strong ties to the categories of "domestic regulatory space" and "domestic spending space". It is also affected by the rate of public sector employment, which is often severely curtailed by global macroeconomic policies, i.e. structural adjustment programs (Cornia and Court, 2001; Milward, 2000).

Summary: Domestic Policy Capacity

- ◊ Ability of public sectors to engage in policy development
- ◊ Extent of public engagement

Domestic Macroeconomic Policies

Global macroeconomic policies have their domestic correlates. These include price, interest rate, taxation and monetary (exchange rate) policies. A key assumption of all macroeconomic policies, for example, is that they will increase economic growth. In the globalization literature, some theorists and researchers presume that this will increase income (with or without increasing income inequalities) and reduce poverty levels, which in turn will improve health (e.g., Dollar, 2001; Dollar and Kraay, 2000). Others challenge this conclusion (e.g., Cornia, 2001; Rodriguez and Rodrik, 2000; Rodrik, 1999; Sen, 1999). Much of this disagreement hinges on differences in measurement, time-period, country and analytical techniques used. The recent era of increased free trade and investment flows has seen a decrease in poverty at the <$1/day level, hence the claim by many that global poverty is declining. But it has also seen an increase in poverty at the <$2/day level, hence the counterclaim by many that poverty is increasing (Ben-David, Nordstrom and Winters, 1999). Only a handful of countries (i.e., east Asia) have grown economically out of poverty. Many analysts believe this is due more to their inward initial development and protracted

protectionism than to liberalization *per se*, i.e., economies that do well with liberalization are those already internally developed, rich and saturated. Which macroeconomic policies, and in what pre-existing development context, provide the greatest poverty reduction remains researchable rather than definitive.

Summary: Domestic Macroeconomic Policies

- ◊ Pricing policies/de-regulation, key commodities (natural resources, food, water, shelter)
- ◊ Subsidies/support for trade-intensive sectors
- ◊ Market intervention policies (e.g. anti-trust, monetary regulation/de-regulation)
- ◊ Interest rate policies
- ◊ Investment patterns (e.g. which sectors, industries, geographic regions) influenced by investment policies (e.g. extent of regulation, tax incentives)
    - o Research and development investment
- ◊ Taxation policies (mix, progressivity/regressivity)

Policies on Movements of People

Relatively few frameworks identify the movements of people as an important element in the globalization – health relationship. The framework used by Casas et al (2001), originally developed by McIntyre and Gilson (2001), refers to migration patterns and remittances. This describes the employment-related flow of people, now subject to WTO negotiations on Mode 4 of the General Agreement on Trade in Services. There are some instances where the remittances from this flow outweigh the costs associated with the (often professional) outward migration, such as Cuba, which, alongside the Philippines, produces a surplus of many professionals. In most cases, the implications for developing countries are negative. This is particularly so with the outward flow of health professionals.

Current data on movement of health professionals from developing countries to wealthy countries is particularly discouraging. The WHO Commission on Macroeconomics and Health specifically cites such movement as a negative aspect of contemporary globalization (2001, p.74). Developing countries invest about $500 million each year in training health professionals who are then recruited by or otherwise move to developed countries (Frommel, 2002). This is roughly 25% of the total aid funding that developing countries receive for health (based on calculations, Tables 1 and 19, OECD 2002). The extent of this of "brain drain" from poor to rich nations is staggering in proportion (Chanda, 2001). The problem is not simply active recruitment by wealthier countries – a result of their own poor health human resource planning – or even the pull of higher earnings and greater opportunities available in such countries. There is also the push in terms of low salaries, lack of positions and little infrastructure for research or advanced training. These are problems rooted in the under development of public health systems in poorer countries. With respect to recruitment behaviours, the UK recently adopted the Guiding Principles for National Health Services (NHS) recruitment policy) recruitment, which state that "developing countries should not be targeted" (Department of Health, 2001). It is difficult to know how well these Principles are being implemented. Some 2,114 South African nurses

were registered in the UK between March 2001 and March 2002, twice the number of the previous year when the "anti-poaching" policy went into place (Carvel, 2002).

Diderichsen et al (2001) use human migration as a defining quality of contemporary globalization. Migration has long been a part of human history although, as with other aspects of contemporary globalization, such as trade and financial flows, an argument can be made that it is now quantitatively and qualitatively different. Quantitatively, the numbers are enormous, with estimates of "people on the move" approaching 1 billion annually. Qualitatively, there is an increasing number of "environmental refugees" joining those peoples migrating for economic reasons or to escape war or persecution. Beneath these reasons may also the "gap" between the quality of life where one resides, and what one thinks it could be elsewhere (Worldwatch Institute, 2001). As real or perceived inequalities within and between nations increases, aided partly by more widespread entertainment images of (usually exaggerated) Western consumerism, the "gap" may grow and, with it, the movement of peoples.

Migration can have both positive and negative population health effects. For wealthier receiving nations, immigration is often the means of reproducing their active labour force and filling low-paying jobs, both of which tally up as economic growth, though the long-term health benefits of continued growth in such countries is hotly debated. Health risks of such migration are associated primarily with the spread of increasingly resistant diseases (though this is also facilitated through travel and trade in goods) and intra-group conflicts or criminality (although this is associated with only a small minority of migrant populations). For poorer receiving nations, migration is more likely a result of people fleeing in some desperation, resulting in refugee camps and disease risks that accompany the often overcrowded, impoverished and unsanitary conditions of such camps. It is also associated with greater use and despoliation of marginal land, deforestation and decreased food security (Labonte, 2001; Worldwatch Institute, 2001).

Summary: Policies on Movements of People

- ◊ Immigration/refugee policies (and flows)
- ◊ Position on GATS Mode 4
- ◊ Brain drain (pushes/pulls)
  - o Remittances
  - o Educational/health care "tourism"

Labour Market Policies

One of the tenets of neo-liberal economic theory influencing much of the thrust of contemporary globalization is the need for greater labour market flexibility to increase productivity and retain national competitiveness in a global environment. Policies indicative of such flexibility include regressive changes in minimum wage legislation, reduction in labour rights and more generally, as Cornia and Court (2001) suggest, a retreat from full employment policies. Outcome measures might include declining rates of unionization and increasing rates of involuntary part-time or unconventional (contingent) work arrangements and so on. The potential health effects of increased labour market flexibility may be double-edged: Positive to the extent improved

flexibility increases long-term economic growth and higher overall and distributive household incomes (adjusted to price); negative to the extent it increases worker insecurity (an element in McMichael et al's 2002 framework), income inequalities (though the relationship between such inequalities and health remains contested) and "working poverty." Quinlan, Mayhew and Bohle (2001), writing about industrialized countries, found that in 76 of the 93 published studies they reviewed, "precarious employment" (temporary or contract work, self-employment, telecommuting, part-time work, etc.) was associated with an increase in work related illness or injury. This correlation is particularly unsettling given the trend toward social and economic policies that increase, and the relatively weaker protections for workers that can be presumed to exist in much of the developing world.

McCulloch, Winter and Ciera (2001) identify labour market policies, alongside price and tax policies, as the major policy vehicles affecting health and quality of life at the household level. Their framework and research can be slighted for largely ignoring physical environmental pathways; Antipolis (Mediterranean Commission on Sustainable Development, 2001), for example, includes in his framework an assessment of how trade liberalization and subsequent labour market effects influences the location and concentration of certain industries, with negative environmental externalities affecting the health of local communities. There is little doubt, however, that labour market policies play an important mediating between globalization and health. They do so not only in terms of income, but also as locales where social networks are formed and social capital is created. This is dependent, in part, on the quality of employment. There is passing reference in a few frameworks to workplace health (e.g. CEC, 1999; Lee, 2000b) but McMichael et al (2002) are the only ones to incorporate it explicitly. This is an important addition, but it is weakened by its limited identification of "physical, chemical and occupational hazards." Broader labour market policies might influence such important conditions as wage rates and working hours, but an important missing element is the degree of workers' control over their conditions (with higher control generally associated with better health) and the extent of worker participation in the design and management of their workplace settings. The latter, sometimes referred to as "workplace democracy," is also associated with positive health outcomes, and has been found in a US study to decline in the absence of legislative standards or regulations (Levine, 1995). The absence, or de-regulation, of such standards, Levine further argues, is partly due to post-liberalization competitive pressures.

There is another important element in labour market policies, that of child labour. Cornia's older framework (1987) is the only one that mentions child labour, as a possible outcome of structural adjustment programs. The issue of child labour has become a divisive point between campaigners in wealthy countries and development groups in poor countries. The effects are often cast as singularly negative, especially when circumstances lead to families selling their children into virtual slave labour or into the sex trade. But other arguments hold that children's labour makes important contributions to household income and the workplace can provide a safer environment than the streets, especially when both parents are working and there is no effective public secondary education system. Policies on child labour (more importantly, child labour practices) are important elements in understanding how globalization can affect health at the household and individual level. As with many of the framework

elements we reviewed, however, there is a need for careful contextual and contingent study.

Summary: Labour Policies

- ◊ Minimum wage
- ◊ Full employment
- ◊ Labour market productivity
- ◊ Labour market flexibility
  - o Wage differentials new/old workers
  - o Reduced bargaining and legal rights/powers
  - o Reduced public sector employment
  - o Wage freezes
- ◊ Health and safety standards
  - o Workers' rights to know about hazards, refuse unsafe work, participate in enforcement
- ◊ Workplace democracy
- ◊ Child labour policies/practices

Food Security Policies

Food security policies are vitally important for many developing countries. Several of the frameworks we reviewed focused on food-related issues (e.g. Cornia, 1987; Costella et al, 1994; Pinstrup-Andersen, 1987;Von Braun et al, 1994). Food has become one of the major debating points in global trade and development discussions. A strong argument from the South is that, while ODA and FDI remain important, opening Northern markets to the products of the South (primarily agricultural and textile) is the most important lever for economic growth and development, at least in the short term.[6] But there are several contentious issues pertinent to increased agricultural trade, food security, environmental degradation, economic growth, and their interrelationship to human health. Will increased food or non-food (cash crop) exports to developed countries create sufficient income for developing countries to pay for the increased food imports they will need to offset the decline in domestic food production? This is a classic liberalization argument but there is little empirical evidence to support this theoretical claim (see Murphy, 2000). More generally, what effects will agriculture export-led development have on poverty and income distribution profiles in poorer nations, public tax regimes and associated social development programs (such as health care, education and so on)? Evidence suggests that agriculture-led growth benefits relatively few domestic food producers and performs poorly over the long-term, when compared to manufacturing-led growth (Kim, Irwin and Gershman, 2000). This indicates that emphasis in poorer agricultural countries should be placed on "value-added" (food processing and packaging) exports rather than raw food commodities, but such value-added products are also subject to tariff escalation. There are also fundamental environmental questions: How will increased agricultural trade affect greenhouse gas emissions, water shortage and

[6] Tariffs on manufactured goods (primarily from the North) have dropped from over 40% to around 5% in the past half century, while tariffs on agriculture (primarily from the South) remain between 40% and 50%. Some analysts believe this inequity is the principle reason for the collapse of the Seattle WTO Round (Denny, 2001).

contamination, or other global environmental issues; and how, over time, might this affect domestic food security? This question is most pressing for Africa, which has experienced serious soil erosion in the past decade, with declining food security, and which is the only continent where poverty rates are expected to rise over the next decade. The "environmental debts" of ongoing ecological degradation (which could be enhanced by increased agricultural-led export growth) will soon outstrip the costs of many African countries' already heavy financial debts (UNEP, 1999).

Research based on Von Braun et al's framework (1994), which modeled the pathways between agriculture commercialization and child nutrition/health, partly affirmed and partly elaborated these more broadly stated findings. For the household unit engaged in agriculture, the effects of macro-level commercialization lie in changes in the prices, wages and risks for the farm. Low prices for commodities may mean that more off-farm labour is needed to ensure the sustainability of the household unit. Shifts in allocation determine time for home goods production by household members. The essential component to this analysis is that income itself does not necessarily shift nutritional levels in children; rather, control over income levels is an important factor. Their framework was applied in a series of case studies of several low-income countries that have implemented various types of commercialization schemes including Guatemala, the Philippines, Papua New Guinea, India, Kenya, Rwanda, Zambia, Malawi, Sierra Leone, and the Gambia. The findings were mixed and reflect the multifaceted and complex nature of the impacts of agricultural commercialization and source of income on child nutrition. In some countries, such as Rwanda and Zambia, the shift from subsistence farming to agricultural commercialization (e.g. a technological change in maize production) had favourable effects on the health and nutrition of children under 5, while in other countries, such as the Philippines and Sierra Leone, the children of commercialized farmers were worse off than the children of subsistence farmers. The differences were viewed partly in relation to the level of and control over income within the household. Female-controlled incomes are related to higher levels of caloric intakes among children, as women are more likely than men to allocated resources towards food. These findings underscore the importance of a gender analysis in any research examining how globalization influences health at the household or individual level.

Summary: Food Security Policies

- ◊ Agricultural commercialization
  - o Cash crop production/domestic crop consumption
  - o Increased income/imported food costs
  - o Agricultural employment
  - o Loss of traditional crop knowledge
  - o Monoculture intensification
- ◊ Food subsidies
- ◊ Domestic/export production subsidies

Policies on Public Provisions

Equitable access to programs, especially in health and education, but also in housing, social welfare, childcare, unemployment, and to water and sanitation services, is a fundamental building block of population health. Labonte (2001) refers to these in his

framework as "health-promoting human services," a sub-set of domestic "health promoting conditions." One of the assumptions of neo-liberal economic theory driving contemporary globalization is that private provision of these programs will be more efficient than public provision. This remains an ideological contention, rather than an empirical fact, with considerable evidence to the contrary. There is less doubt over, and even more evidence supporting, the importance of *public* provision of these programs and services in terms of equity in access. Several frameworks already cited (e.g. Haddad and Mohindra, 2001; Cornia and Court, 2001; Reed and Sheng, 1997) provide evidence of deteriorating access to such programs or services under conditions of liberalization and privatization. Others argue that effects are subtler, for example, trade openness might increase women's share of paid employment, which is an important element of gender empowerment, and women's and children's health (Ozler, 1999 in UNDP, 1999). But the bulk of such employment to date has been in export processing zones, which employ primarily single women (therefore there is little family and, specifically, child health gain, except for potential remittances) and which often have prison-like living/working conditions or anti-union legislative protection (Labonte, 2001). There is also evidence of a global "hierarchy of care." Women from developing nations employed as domestic workers in wealthy countries send much valued currency back home to their families, some of which is used to employ poorer rural women in their home countries to look after the children they have left behind. These rural women, in turn, leave their eldest daughter (often still quite young and ill-educated) to care for the family they left behind in the village (Hochschild, 2000).

Much of the globalization – health research to date has focussed on these program and service pathways. Research into, and policy advocacy around, these programs (how equitably funded? how equitably distributed? with what health impacts and at what opportunity costs for other potential public investments?) has virtually exploded in developed countries over the past twenty years, and is increasing in developing countries. When publicly provided, without cost-recovery or user fees, these programs can also be considered a form of non-income resource transfer from rich to poor. Policies for public provisioning, in turn, are easily measurable by examining absolute, relative (GDP and *per capita* adjusted) and temporally changing investments in different public sectors, though assessing equity in access across populations would require more detailed national case studies. For poorer countries, there is also dependence back to the levels of ODA targeted to certain public sectors, such as health, education and water/sanitation. FDI might also be considered in such analyses, especially since most FDI at present is being used to purchase (privatize) previously public services and systems, with often-egregious effects on the poor. One important aspect of such programs, although amenable only to specific case-study design, is the degree to which they are offered in empowering or capacity-building ways. While marginal with respect to overall population health, empowering approaches to program delivery can have positive health impacts on participants and local communities separate from the program or service elements themselves (Labonte and Laverack, 2001).

Summary: Policies on Public Provision

- ◊ Education
- ◊ Social welfare

- ◊ Health care
- ◊ Water and sanitation
- ◊ Food subsidies
- ◊ Child care services
- ◊ Targeting of tax/transfer programs
- ◊ Empowerment approaches, state/NGO programs/services

Policies on Political Power

Super-ordinate "political systems and processes" that "drive" contemporary globalization are also influenced by it and can be re-located at the domestic level as policies on political power. Specific elements of these policies include domestic legislation supporting human rights, which Lee (2000b) argues may be increasing with globalization; participatory democratic processes, which Rico (1998) argues requires particular attention to supports for women and other historically marginalized or excluded groups; gender empowerment and media (freedom, ownership). Labonte (2001) and Lee (2000a) both make the point that the global dominance of Western media "is marketing…particular consumerist lifestyles" (Lee, 2000a, p.257). More positively, free media can increase the diffusion of new ideas. The internet has certainly played an important role in contemporary globalization debates and organizing efforts.

Summary: Policies on Political Power

- ◊ Human rights (domestic legislation)
- ◊ Participatory democratic processes
  - o Public participation (including supports for)
- ◊ Gender empowerment
- ◊ Media (freedom, ownership)
- ◊ Internet access

Policies on Environmental Protection

There are four principle ways in which globalization is affecting health through environmental pathways:

1. increased production and consumption of goods;

2. increased resource extraction and pollution (environmental stress and degradation, destruction of unique ecological niches);

3. decreased environmental regulatory space due to international trade agreements (though requirements for subsidy reduction, especially in agricultural and fisheries, will likely be more environmentally healthy than damaging, see Labonte and Spiegel, 2001); and

4. increased transportation-related externalities (fossil fuel use, transportation "chokes," particularly in developed countries, creation of new transportation

corridors, transportation-related injuries and deaths, particularly in developing countries).

Many of the frameworks captured in our review were developed precisely to refine and detail these pathways, in some instances including within them reciprocating impacts on social environments. The degree to which increased trade liberalization and global competition is creating an "environmental race to the bottom" – at least in regulatory terms – remains a contested and researchable issue. There is some evidence that multinational companies in developing countries are "cleaner" than domestic companies. To the extent cleaner technologies are transferred from rich to poor nations, some degree of environmental protection is enhanced. The relationship between multilateral trade and environment agreements, however, remains vexed. There is also abundant evidence from developing countries that trade liberalization is directly depleting resources through increased and unsustainable harvests (fisheries, forests), with few of the benefits but many of the remediation costs accruing to the exporting countries; and indirectly by creating a "pull" on illegal resource extraction in the context of a "push" due to understaffed and/or ineffectual domestic regulatory capacities (Labonte, 2001; Labonte and Spiegel, 2001). There is also evidence of trade-related biodiversity loss, a decline in what several of the frameworks identify as "unique ecological niches" (such as wetlands) and despoliation due to introduced alien species.

Antinopolis (Mediterranean Commission on Sustainable Development, 2001) in his study refers to another important effect trade liberalization is having on environmental conditions. As the disconnection between production and consumption increases in geographic scale (for all goods, but especially for resource-dependent products such as food and fibre), consumer behaviours increasingly lack feedback mechanisms to monitor their behaviours. A sub-set of this disconnect pertains to standards for labelling, a particularly contentious issue now for genetically modified products.

Summary: Policies on Environmental Protection

- ◊ Regulatory space (trade agreement conflicts)
  - o Policies on exposure to harmful substances (e.g. tobacco, alcohol)
- ◊ Regulatory intent (global competitive pressures)
- ◊ Regulatory capacity (enforcement)
- ◊ Consumer awareness (labelling, ecological impacts of consumption patterns)

There is potentially an unwieldy range of environmental pathways and associated concerns that any framework on globalization and health might have to consider. Below we distil the key pathways and their elements identified by our framework review.

Category of Pathway	**Pathway Elements**	**Potential Indicators**
Resource base	Fossils/fossil fuel	Energy consumption Energy mix
	Soil	Pesticide use Nitrogen loading Forested land Intensity of forest use Salinisation
	Vegetation	
	Water	Water consumption Quality of drinking water Freshwater use Lead, copper concentration Surface water pollutants Access/cost
	Sanitation	Sewage treatment connections rates
	Air	Acid precipitation Ozone concentration Particulates POPs CO emissions CO2 emissions
	Food	Fisheries/fish stock Food security (reserves)
Sink function		Forestation/deforestation rates
Wastes		Waste generation rates Recycling rates
Amenities	Landscapes	Aesthetic values Recreational values
	Vulnerable ecosystems	Coastlines (development)
	Tourism	Transportation impacts Excess water use Spread of disease Introduction of foreign flora
Biodiversity	Flora and Fauna	Number of extinct/endangered/threatened species
	Habitats	Unique ecological niches Unique bio-environmental zones Protected areas
	Introduced alien species	

Aggregate	Climate change	Greenhouse gas emissions Carbon intensity of economy
	Ozone depletion	
	Acidification	
	Energy intensity (global)	
	Desertification	

While not exhaustive, this template summarizes the pathways and elements environmental frameworks and research have so far identified as important linkages between globalization and ecological (environmental) health. The final category (aggregate) identifies what Labonte and Spiegel (2001) call "inherently global (health) issues," the presence of which threatens what other frameworks identify as "global environmental endowments." Apart from non-coastal areas of the world's oceans, however, there are no "global environmental commons." It is appropriate, then, to model these pathways as domestic. They are subject to domestic policies, regulations, population pressures and so on and, while supranational globalization drivers shape all of these, they remain, at present, largely within the remedial ambit of national governments.

4. COMMUNITY CONTEXTS

As all of the detailed frameworks in our study devolved to more local levels, elements from higher order categorizations recurred. With respect to policies on public provision, the community context level became "access to" the various services and programs identified in the higher order domestic policy context. Haddad and Mohindra (2001), amongst others, introduced new micro-level variables in this access equation: price, quality and availability. These constitute some of the principal supply-side elements in service access. Disparities in access become a community contextual issue. Not only might there be geographic or regional disparity; many poorer countries have significantly unequal allocations of public programming and service resources within the same community. Several of the two super-ordinate category elements replicate here as local embodiments, but now primarily as reactions to macroeconomic policy contexts and trade agreements/liberalization, since those are set at national, and not local, governing levels. Civil society and non-governmental organizations are also mediating elements, although local organizations can sometimes suffer from a "localism" that fails to interrogate the extent to which globalization drivers might be determining their contexts (Labonte, 1999). Community capacities comprise another set of community contextual elements. These describe attributes culled from the community development, international development and community empowerment literatures that are associated with a greater probability that a community can successfully assess, analyze and act on issues of importance to its members. Key capacity domains include: opportunities for public participation, leadership, democratic local organizations, resource mobilization, problem assessment and analysis skills, and negotiated control over external programs and program resources (Laverack and Labonte, 2000). Finally, urbanization, and all that it portends in terms of social and environmental conditions

supportive of, or damaging to, human health, is perhaps the strongest emanation of globalization's community "face."

Summary: Community Contexts

- ◊ Supply side variables, service and program access
  - o Price
  - o Quality
  - o Proximity
- ◊ Geographic and regional disparities
- ◊ Local resources (environmental endowments) and opportunities (capacities to utilize endowments productively)
- ◊ Local governments
  - o Democratic and accountable (transparent)
- ◊ Civil society organizations
  - o Democratic and accountable (transparent)
  - o Representative (organizations for marginalized groups)
- ◊ Social capital/social cohesion (social networks)
- ◊ Community capacities
- ◊ Urbanization
  - o Rate
  - o Positive impacts (e.g. reduced transport needs)
  - o Negative (e.g. land use despoliation, water/sanitation, sprawl)

5. HOUSEHOLD CONTEXTS

Some frameworks reduce to the level of the individual, e.g., Cornia's (1987) assessment of the determinants of individual child nutrition and health. Most, however, find a reasonable bottom at the household level. Those that do emphasize the importance of an analysis to this contextual level (e.g. Costella et al, 1994; Haddad and Mohindra, 2001; Leach and Mearns, 1991; McCulloch, Winter and Ciera, 2001; Reed and Sheng, 1997; Rico, 1998; Woodward et al, 2001), arguing that important gender and age-related dynamics are omitted in studies relying upon more aggregated data sets. This poses a methodological challenge, since gathering data at the household level can be labour and cost-intensive; and re-iterates the oft-expressed concern by many framework authors that comparative case studies permitting this depth of "mining" provide more useful and even comparatively valuable information than cross-national research regressing a few variables.

All frameworks incorporating a household level refer to gender roles and analysis. McCulloch, Winter and Ciera (2001), for example, acknowledge the importance of a gender analysis at the household level, noting that the effects of poverty fall "disproportionately on women, children and the elderly" (p. 69). They discuss in terms of "gender power within the household," and how trade-related lowered family wage and a rise of female labour, but without compensational help with household duties, may decrease women's welfare and compromise any increased household power their income-earning potential might have accrued them. Trade shocks may also negatively affect the elderly and the young in ways separate from their own market participation, i.e., less family eldercare or childcare time, greater responsibility for household maintenance, and so on.

Summary: Household Contexts

- ◊ Current household money, income, distribution
  - o Gender distribution
  - o Domestic (gendered) allocation of time and resources
  - o Savings
  - o Borrowing capacity
- ◊ Subsistence production
  - o Food
  - o Other commodities
- ◊ Health behaviours
  - o Mother's child-rearing practices
  - o Time available for children
- ◊ Health, education and other program expenditures (household health investment)
  - o Demand side: needs, ability/willingness to pay, perceived quality, perceived accessibility
  - o Spending impacts on other health inputs (e.g. food)

Conclusion

We exclude from framework elements the plurality of health measures that might be used as endpoint outcomes in research or policy analysis on the globalization – health relationship. Indeed, reliance upon health measures (such as mortality, morbidity or disability rates) to "test" the health impacts of globalization is flawed for a number of reasons. One of these is the difficulty of obtaining valid and reliable data, especially for many of the least developed countries. Another is a well-known problem associated with lag-time biases; given the lifespan, cumulative impacts of social and environmental conditions on health, are the health gains or problems being observed now, and especially for adults, the result of liberalization changes of the past 5 or 10 years, or of earlier pre-liberalization contexts? The HIV/AIDS pandemic, national or regional conflicts, environmental catastrophes are all "wild cards" that, despite partly being indicators of globalization phenomena, render any simple and cross-national comparative analysis of globalization and health difficult, if not suspect.

As we noted earlier, a good framework is one that is:

- ◊ Comprehensive (multi-leveled and both socially and environmentally inter-lined)
- ◊ Layered (simplified for policy and public communication purposes)
- ◊ Supported by theory, empirical evidence and argumentative text
- ◊ Has defined and/or operationalized elements
- ◊ Incorporates elements indicative of both positive and negative globalization/health effects
- ◊ Incorporates elements that identify people as social actors
- ◊ Incorporate elements allowing a gender analysis
- ◊ Elements of differing framework levels accommodate an analysis of the social distribution and use of power

- ◊ Most elements have data available
- ◊ Directional arrows are based on the weight of evidence and significance of the effect

The utility of any framework is that it should identify a number of elements that link globalization to health, through direct, indirect and policy-dependent pathways. Many of the links between of the pathways inherent in our synthesis of framework elements (e.g. trade liberalization and biodiversity, macroeconomic adjustment policies and health services) have already been studied empirically. Additional research can further explore sub-sets of framework linkages. The most useful information, particularly from a policy vantage, would be comparative case studies where as many of the potential linkages could be assessed within one country, using secondary data, existing partial studies and new research as required; with comparisons made *ex post* between different countries displaying different "super-ordinate," "macroeconomic policy" and "trade agreement" patterns.

Globalization is a fairly new construct, if not an entirely new phenomenon. Its impacts on health are potentially enormous, for both better and worse. Reaching some consensus on how globalization might maximize the former and minimize the latter depends on assembling evidence and undertaking new research that, as Starfield (2001) argues, is based on a delimited range of frameworks. We hope our efforts in this framework review contribute to that end.

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Appendix 1: Search Strategy

The search for explicit analytical frameworks involved several strategies:

a) The internet was perused using search engines such as Google, and Altavista. The search parameters included any documents that included an explicit analytical framework. To locate these frameworks, the terminology "analytical", "framework", "pathways", "linkages", "relationship", were utilized in conjunction (in various combinations) with descriptors of globalization including "globalization", "globalisation", "neoliberalism", "liberalization", "global economy", "global trade", "international trade", "global economics", "transborder", "multilateral trade", and outcomes which include "health", "living conditions", "well-being", "biodiversity", "sustainability", "sustainable development", "environment", and "poverty".

b) The University of Saskatchewan library repository was searched for any documents that outlined the linkages between globalization and health and or health determining living/environmental conditions. WEBSPIRS, and Publine were also searched using the above terminology. Databanks searched under WEBSPIRS include GEOGRAPHY, MEDLINE, PAIS INTERNATIONAL, psycINFO, SOCIAL WORK ABSTRACTS, and Sociological Abstracts

c) Established researchers in the area of globalization and health were contacted by means of email and follow-up phone conversations. Researchers were first contacted via email with a description of the project, a request for a summary description of their current research activities on the effects of globalization on health and/or health determining living/environmental conditions, and the names and contact information for other researchers they felt should be contacted. The researchers were also asked if they knew of any documents that included explicit analytical frameworks that linked globalization to health and/or health determining living/environmental conditions. Follow-up phone conversations were made with the researchers if clarifications were needed or if the researchers had not responded to the email request.

Appendix Two: Précis of Analytical Frameworks

As this is a very long document (approximately 150 pages) copies will be forwarded electronically only upon request. Please send request to: Ronald.labonte@usask.ca.

Appendix 3: A New Framework Of Globalization And Health

Figure 1: Simplified Model of Globalization and Health

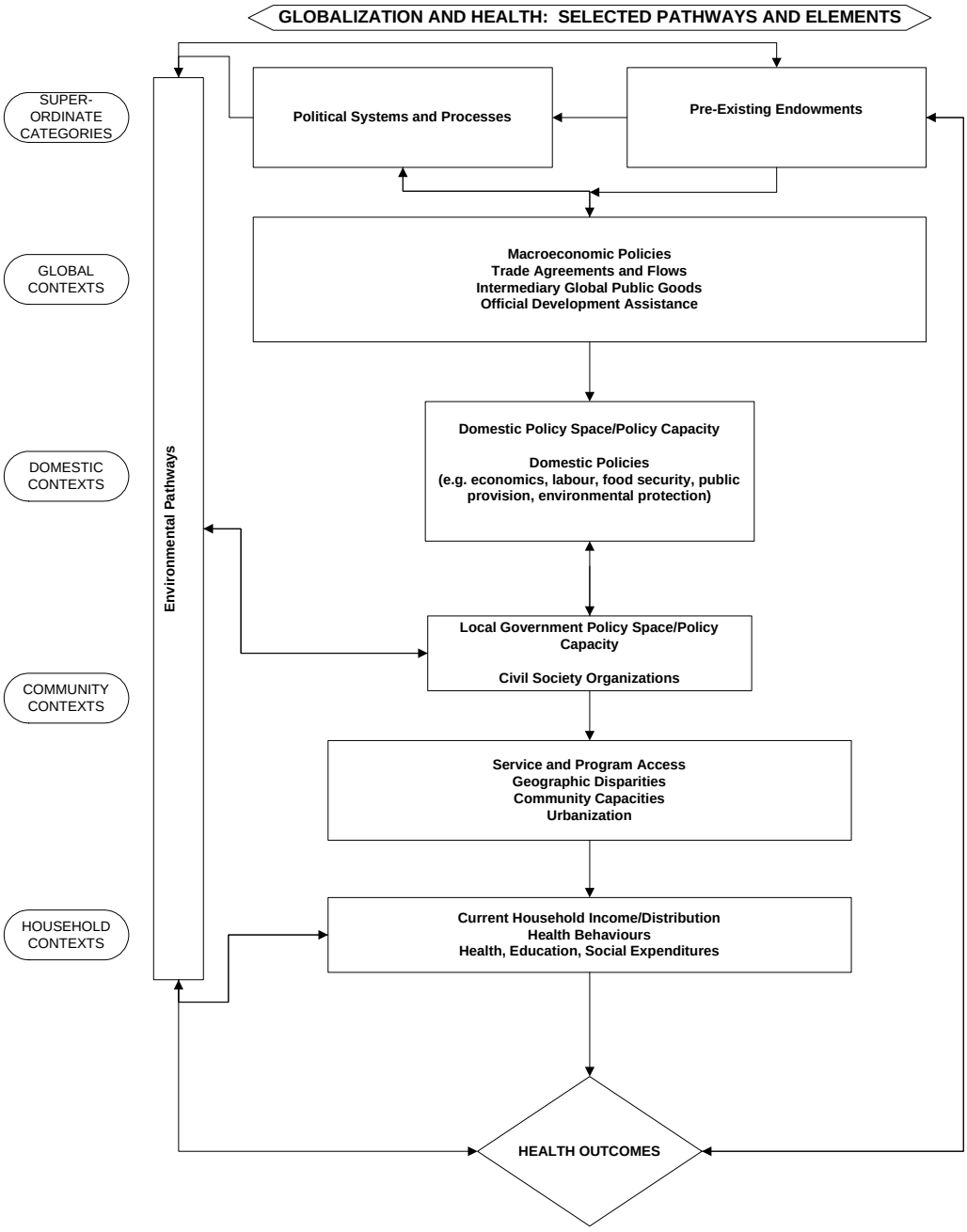

Figure 2: Mid-Level Complexity Model of Globalization and Health

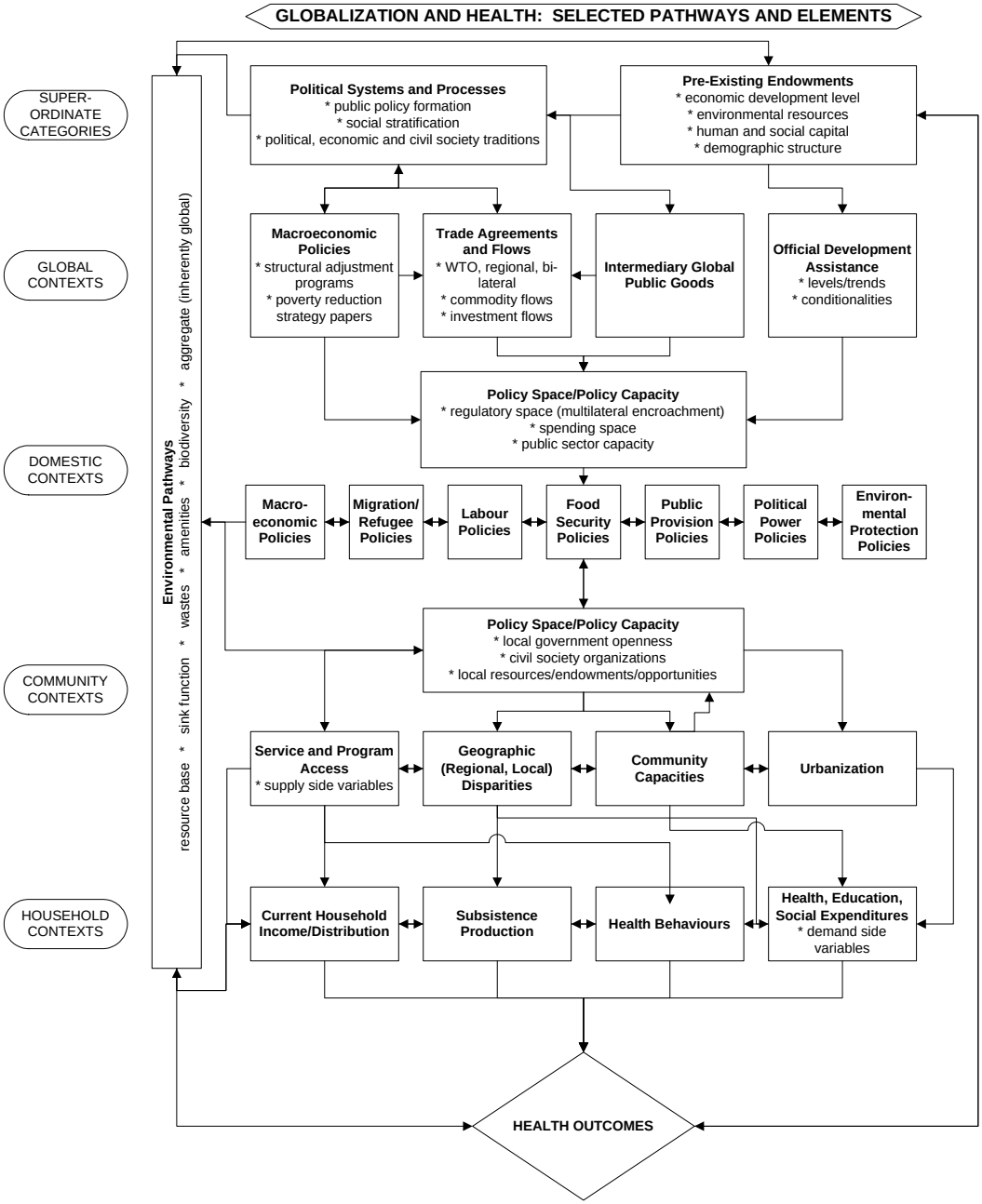

Table 1: Detailed Elements of Globalization and Health Categories

LEVEL	CATEGORY	ELEMENTS
SUPERORDINATE CATEGORY	*Political Systems and Processes*	Acceptance of discrimination (on the basis of race, ethnicity or gender) Definition of public need and attitudes towards privatization Determination of public policy (degree of citizen participation) Level of unionization Accountability of public administration Democratic institutions Political/economic traditions (e.g. social welfare vs. welfare minimalism) Social stratifications traditions (e.g. caste, class) Presence of conflict/political instability (intra-nationally, regionally) Existence and enforcement of regulatory frameworks for GPGs History of government compliance with GPG regulatory frameworks History of government support for, commitment to and participation in creating GPG regulatory frameworks History of civil society organization (number, representativeness, transparency and accountability)

SUPERORDINATE CATEGORY	*Pre-Existing Endowments*	Economic development level (income, wealth, manufacturing capacity, technological access/sophistication) Environmental (natural) resources (water, land, fibre, energy, other resources) Peoples' (equitable, democratic) control over environmental resource bundles (asset distribution) Peoples' capacities to make use of environmental resource bundles Level of human capital development Level of social capital development Level of civil society organization and engagement Age pyramid, sex ratio, excess population (ecological footprint), fertility rate
GLOBAL CONTEXTS	*Macroeconomic Policies*	Structural adjustment programmes Liberalization policies (e.g. tariff reductions, removal of import controls, elimination of restrictions on foreign investment/capital markets) Reduced state controls on prices (e.g. monetary policies affecting exchange rates favouring exports, interest rates higher than inflation, elimination of minimum wage floors, wage freezes and removal of other labour regulatory 'rigidities,' elimination of food price controls) Privatization of state productive assets (including contracting out) Reduced state public expenditures to minimum (including devolved responsibilities to local communities, user-charges and other cost-recovery schemes) Bureaucratic practices and state policies re-directed to enhance private sector growth Poverty reduction strategy papers Privatization of state productive assets Increased trade liberalization Cost-recovery for health, education and other social programs

GLOBAL CONTEXTS	*Trade Agreements*	WTO Regional (e.g. NAFTA, FTAA, EU Agreements, ASEAN, MECROSUR) Bilateral
GLOBAL CONTEXTS	*Trade Flows (Commodities)*	Actual flows Commodity specialization Trade in health-damaging products Tobacco Weapons Toxic products/waste Trade balance Changes in exports and imports Balance of payments Market share(s) Intra-corporate productive integration, concentration and market share
GLOBAL CONTEXTS	*Trade Flows (Investment)*	Short-term (speculative) capital flows Currency and banking flows/disruptions Levels of FDI From where To where For what Tax transfers Transfer pricing Tax havens Foreign borrowing levels

GLOBAL/DOMESTIC LINKAGE	*Domestic Regulatory Space*	Reductions in subsidies to domestic industries Reductions in export subsidies Reductions in capital market controls 'Compradorization' status due to FDI dependence
GLOBAL/DOMESTIC LINKAGE	*Domestic Spending Space*	Income from tariffs Tariff reductions Restrictions on quantitative restrictions Trade protectionism, wealthy countries Direct environmental remediation costs Costs of WTO compliance
GLOBAL/DOMESTIC LINKAGE	*Intermediary Global Public Goods*	Existence and details of IGPGs Enforcement powers of IGPGs Superordinate IGPGs (which one trumps when there is conflict?)
GLOBAL/DOMESTIC LINKAGE	*Official Development Assistance*	Levels/trends To what regions To what sectors Basic/non-basic ratio Tied/untied ratio Technical assistance ratio Conditionalities (e.g. PRSPs)

DOMESTIC CONTEXTS	*Domestic Policy Capacity*	Ability of public sectors to engage in policy development Extent of public engagement
DOMESTIC CONTEXTS	*Domestic Macroeconomic Policies*	Pricing policies/de-regulation, key commodities (natural resources, food, water, shelter) Subsidies/support for trade-intensive sectors Market intervention policies (e.g. anti-trust, monetary regulation/de-regulation) Interest rate policies Investment patterns (e.g. which sectors, industries, geographic regions) influenced by investment policies (e.g. extent of regulation, tax incentives) Research and development investment Taxation policies (mix, progressivity/regressivity)
DOMESTIC CONTEXTS	*Domestic Policies on Movements of People*	Immigration/refugee policies (and flows) Position on GATS Mode 4 Brain drain (pushes/pulls) Remittances Educational/health care “tourism”
DOMESTIC CONTEXTS	*Domestic Food Security Policies*	Agricultural commercialization Cash crop production/domestic crop consumption Increased income/imported food costs Agricultural employment Loss of traditional crop knowledge Monoculture intensification Food subsidies Domestic/export production subsidies

DOMESTIC CONTEXTS	*Domestic Labour Policies*	Minimum wage Full employment Labour market productivity Labour market flexibility Wage differentials new/old workers Reduced bargaining and legal rights/powers Reduced public sector employment Wage freezes Health and safety standards Workers' rights to know about hazards, refuse unsafe work, participate in enforcement Workplace democracy Child labour policies/practices
DOMESTIC CONTEXTS	*Domestic Policies on Public Provision*	Education Social welfare Health care Water and sanitation Food subsidies Child care services Targeting of tax/transfer programs Empowerment approaches, state/NGO programs/services
DOMESTIC CONTEXTS	*Domestic Policies on Political Power*	Human rights (domestic legislation) Participatory democratic processes Public participation (including supports for) Gender empowerment Media (freedom, ownership) Internet access

DOMESTIC CONTEXTS	*Domestic Policies on Environmental Protection*	Regulatory space (trade agreement conflicts) Policies on exposure to harmful substances (e.g. tobacco, alcohol) Regulatory intent (global competitive pressures) Regulatory capacity (enforcement) Consumer awareness (labelling, ecological impacts of consumption patterns) Main environmental pathways: Resource base (fossils, soil, vegetation, water, sanitation, air, food) Sink functions Wastes Amenities (landscapes, vulnerable ecosystems, tourism) Biodiversity (flora and fauna, habitats, alien species) Aggregate (climate change, ozone depletion, acidification, eutrophication, energy intensity, desertification)

COMMUNITY CONTEXTS	*Services and Programs Access*	Supply side variables, service and program access Price Quality Proximity
COMMUNITY CONTEXTS	*Geographic Disparities*	Regional, local and group-based inequalities in access Local resources (environmental endowments) and opportunities (capacities to utilize endowments productively)

COMMUNITY CONTEXTS	*Community Capacities*	Local governments Democratic and accountable (transparent) Civil society organizations Democratic and accountable (transparent) Representative (organizations for marginalized groups) Social capital/social cohesion (social networks) Resource mobilization Local leadership Assessment and analysis skills Citizenship/citizen participation
COMMUNITY CONTEXTS	*Urbanization*	Rate Positive impacts (e.g. reduced transport needs) Negative (e.g. land use despoliation, water/sanitation, sprawl)

HOUSEHOLD CONTEXTS	*Current Household Income/Distribution*	Gender distribution Domestic (gendered) allocation of time and resources Savings Borrowing capacity
HOUSEHOLD CONTEXTS	*Subsistence Production*	Food Other commodities
HOUSEHOLD CONTEXTS	*Health Behaviours*	Mother's child-rearing practices Time available for children
HOUSEHOLD CONTEXTS	*Health, Education and Social Expenditures*	Demand side: needs, ability/willingness to pay, perceived quality, perceived accessibility Spending impacts on other health inputs (e.g. food)

Environmental Pathways

Category of Pathway	Pathway Elements	Potential Indicators
RESOURCE BASE	*Fossils/fossil fuel*	Energy consumption Energy mix
	Soil	Pesticide use Nitrogen loading Forested land Intensity of forest use Salinisation
	Vegetation	
	Water	Water consumption Quality of drinking water Freshwater use Lead, copper concentration Surface water pollutants Access/cost
	Sanitation	Sewage treatment connections rates
	Air	Acid precipitation Ozone concentration Particulates POPs CO emissions CO2 emissions
	Food	Fisheries/fish stock Food security (reserves)
SINK FUNCTION		Forestation/deforestation rates
WASTES		Waste generation rates Recycling rates

AMENITIES	*Landscapes*	Aesthetic values Recreational values
	Vulnerable ecosystems	Coastlines (development)
	Tourism	Transportation impacts Excess water use Spread of disease Introduction of foreign flora
BIODIVERSITY	*Flora and Fauna*	Number of extinct/endangered/threatened species
	Habitats	Unique ecological niches Unique bio-environmental zones Protected areas
	Introduced alien species	
AGGREGATE	*Climate change*	Greenhouse gas emissions Carbon intensity of economy
	Ozone depletion	
	Acidification	
	Energy intensity (global)	
	Desertification	

While not exhaustive, this template summarizes the principal pathways and elements environmental frameworks and research have so far identified as important linkages between globalization and ecological (environmental) health. The final category (aggregate) identifies what Labonte and Spiegel (2001) have called "inherently global (health) issues," the presence of which threatens what some frameworks identify as "global environmental endowments." Apart from non-coastal areas of the world's oceans, it is fair to say that there are no "global environmental commons." It is appropriate, then, to model these pathways as domestic. They are subject to domestic

policies, regulations, population pressures and so on and, whilst supranational globalization drivers shape all of these, they remain, at present, largely within the remedial ambit of national governments.