Designing an Integrative Framework for Different Approaches to Impact Analysis

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Abstract

The paper is a contribution to ongoing efforts by the International Development Research Centre's (IDRC) Micro Impacts of Macroeconomic Adjustment Policies (MIMAP) program to integrate different approaches to impact analysis, flowing from discussions held at MIMAP's Poverty Monitoring Network Meeting in Rabat, Morocco, January 28-31, 2002. The primary objective of the analysis is to tease out areas of convergence and divergence between the MPIA, PMMA and CBMS networks with respect to impact analysis and suggest ways in which they may be fruitfully integrated. This entails first, presenting a typology of approaches to impact analysis and second, a typology of ways of integrating them. The resulting analytical frameworks are then applied to MIMAP within the context of a discussion of areas of potential convergence. The final section summarizes the main points and concludes with recommendations to improve practice.

Background and objectives

This paper is a contribution to ongoing efforts by the International Development Research Center's (IDRC) Micro Impacts of Macroeconomic Adjustment Policies (MIMAP) program to integrate different approaches to impact analysis. MIMAP is composed of three

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main streams, namely: Modeling and Policy Impact Assessment (MPIA), Poverty Measurement, Monitoring and Analysis (PMMA) and Community-Based Monitoring System (CBMS). Together they comprise the recently created Poverty and Economic Policy (PEP) Network. The MPIA network has concentrated on computable general equilibrium (CGE) modeling of the impact of policy changes on a country's poverty situation. The PMMA component has relied heavily on, or intends to pursue, a number of applied 'microeconomic' tools to gauge impact including benefit incidence analysis, labor market modeling, intra-household modeling and partial equilibrium analyses of specific policies. The CBMS has focused on data generated at the community-level using survey and other instruments. Bringing closer convergence to these three network-level components has been a core objective of the MIMAP project.[1]

The paper originated in discussions held at MIMAP's Poverty Monitoring Network Meeting in Rabat, Morocco from January 28 to 31, 2002. A number of participants at this conference remarked that "impact analysis" was one logical area of convergence for the three principle components of MIMAP. All three attempt to gauge the impact of policies or programs[2] on poverty incidence, though in different ways and for different purposes. As a consequence, a number of issues arise concerning the possibilities and limitations of integrating the different approaches as well as the specific ways of doing so.

The primary objective of this analysis is to highlight the areas of convergence and divergence among the MPIA, PMMA and CBMS networks with respect to impact analysis, and suggest ways in which they may be fruitfully integrated. This entails the presentation of 1) a typology of approaches to impact analysis; and 2) a typology of ways of integrating them. The resulting analytical frameworks are then applied to MIMAP within the context of a discussion of areas of

[1] CREFA/AKI 2002, IDRC/MIMAP 2001/2000.

[2] It should be noted that the CBMS strand has focused much more on poverty monitoring than impact analysis, though it is concerned with both.

potential convergence. A final section summarizes the main points and concludes with recommendations to improve practice.

A typology of approaches to impact analysis

The primary objective of this section is to spell out the relationships across different approaches to impact analysis. In order to do this, the three main components of MIMAP are situated within a common analytical framework which distinguishes a number of their core characteristics. This framework will serve as a basis for the discussion of ways of integrating approaches to impact analysis in the next sections.

Definitional and conceptual issues

Impact analysis is defined differently in different contexts. For the present purpose, impact analysis has two key characteristics:

- **First**, it is primarily concerned with well-being outcome/ impacts and not policy or program inputs/outputs (unless they are closely related to well-being impacts (see below)); and
- **Second**, it is concerned with attributing impacts to programs or policies and not simply tracking changes in them, i.e., it addresses the 'attribution problem'.

There are a number of points to make explicit about this definition:

First, impact analysis differs from well-being monitoring, which is concerned with tracking changes in well-being outcomes and not attributing them to specific programs or policies. Well-being monitoring may have a number of policy-relevant applications[3] but

[3] Well-being monitoring may serve the following purposes: to assess the overall country/district performance with respect to living conditions; to assess the relative performance of different geographical regions, districts, and socio-economic groups (sample size permitting); to raise 'red flags' for more in depth inquiry if troubling trends are revealed; to suggest policy responses in those cases where pathways generating outcomes are known or not necessary to formulate a policy response; to facilitate resource allocation decisions between regions or districts if such allocations are made on the basis of need.

it is *usually* unable to assess policy or program impact.

Second, impact analysis relies on well-being *outcome* indicators or other indicators which are closely related. It is important to emphasize that certain types of impact analysis rely on *output* indicators which are closely and causally related to well-being outcomes (see below).

Third, impact analysis requires establishing *causal links* between policies and well-being outcomes in order to solve the attribution problem. It does not require a counterfactual scenario, which is necessary only to show the *magnitude* of impact.

There are many different ways to establish policy impact. The following section reviews a range of such techniques and presents a framework to categorize them.

Categorizing impact analysis

Impact analysis requires causally linking policies with well-being outcomes. There are many ways to do this. The present section attempts to categorize these in two different ways. First, a number of techniques are distinguished on the basis of how they establish causal links and whether or not they can ascertain the magnitude of impact. Second, these same techniques are categorized on the basis of level of analysis (macro/meso/micro) and types of policy (macro, external, sectoral, and social) that they are best suited to address. The discussion is not meant to be an exhaustive account of impact evaluation approaches[4] but rather an examination of a sub-set which relates closely to the activities of MIMAP. The following are particularly relevant:

Formal modeling of transmission mechanisms

This is the approach which tends to characterize the impact analyses

[4] Good overviews of policy-level impact analysis are presented in World Bank (2002) and Lipton with Longhurst (1989). For program-level impact analysis see Baker (1999), Roche (1999) and Marchant (2001).

conducted within the PMIA and PMMA streams. Though there are important differences between the modeling exercises conducted by each (see below), they converge in that they formally model the pathways, or transmission mechanisms, through which policies impact upon well-being. In addition, they simulate counterfactual scenarios which permit an estimation of the magnitude of impact. Examples include, CGE models, partial equilibrium models, reduced form models (with policy variables), agricultural household models, demand models, etc.

Calculation of the distribution of benefits

In this approach the causal pathways transmitting impact are (assumed to be) direct and well-known. As a consequence, they do not require formal modeling or mapping. The best example concerns direct transfers of income to individuals or households. Calculating the distribution of the ensuing benefits (income) allows one to assess the impact of a given transfer policy on different socioeconomic groups. Any number of counterfactuals can be simulated in 'back of the envelope' fashion. The counterfactual is simply the situation prevailing in the absence of the transfer or in the presence of transfers of different value. This type of impact analysis, benefit incidence analysis, has been conducted by the PMMA group.[5]

Tracking output indicators closely linked to outcomes

To date, this approach has only partially been used within the context of CBMS activities (Asselin, 2000). The idea is to identify output indicators which are causally linked to outcomes. Use of output indicators forges the causal links with policies (or programs) and well-

[5] The limitations of benefit incidence as an impact analysis tool are surveyed in van de Walle (1998). Benefit incidence analysis can also be integrated with formal modeling with a view to estimate behavioral responses to say, government transfers. For example, Cox and Jimenez (1995) examine whether public transfers have the effect of crowding out private ones thereby limiting the impact of the former.

established links between outputs and outcomes solve the attribution problem. A good example involves immunization indicators which are a policy/program output indicator and closely linked to reductions in types of infectious disease. Another example involves certain types of access indicators, in particular access to safe drinking water, in cases where changes in access are due mainly to public policy (whose impact is being assessed). There are two key properties of the output indicators chosen: 1) they must be sufficient conditions for a change in the related well-being indicator; and 2) they must be the main reason for a change in the well-being indicator (i.e., there must be a 'near necessary condition'). Indicators of this sort solve the attribution problem *and* allow for an approximate determination of the magnitude of impact. The reason is the same as for benefit incidence. That is, if conditions 1 and 2 hold, then the causal pathways are assumed to be direct and well-known and any number of counterfactuals can be simulated to infer magnitude.[6]

Ascertaining user satisfaction

Assessing user satisfaction with public service delivery is closely related to the preceding point. User (dis)satisfaction falls in between a policy/program output and a well-being outcome indicator.[7] It is assumed to be causally related to both and thus solves the attribution problem. There are a range of ways of ascertaining user satisfaction, including report cards (PAC 2002), modules in household surveys, PRA-type techniques, etc. Apparently, the CBMS team is planning to incorporate modules of this sort in Vietnam and Kerala, India.

[6] There is a difference, however. The approximation of the magnitude of impact will vary proportionately with the 'nearness' of the 'near necessary condition'. That is, as the number of other factors responsible for changes in the well-being outcomes increases, the independent impact of the policy output in question decreases.

[7] User satisfaction could be conceived as a well-being outcome in and of itself but it is not the primary well-being outcome which public policy in say health, education, etc. is strives to achieve.

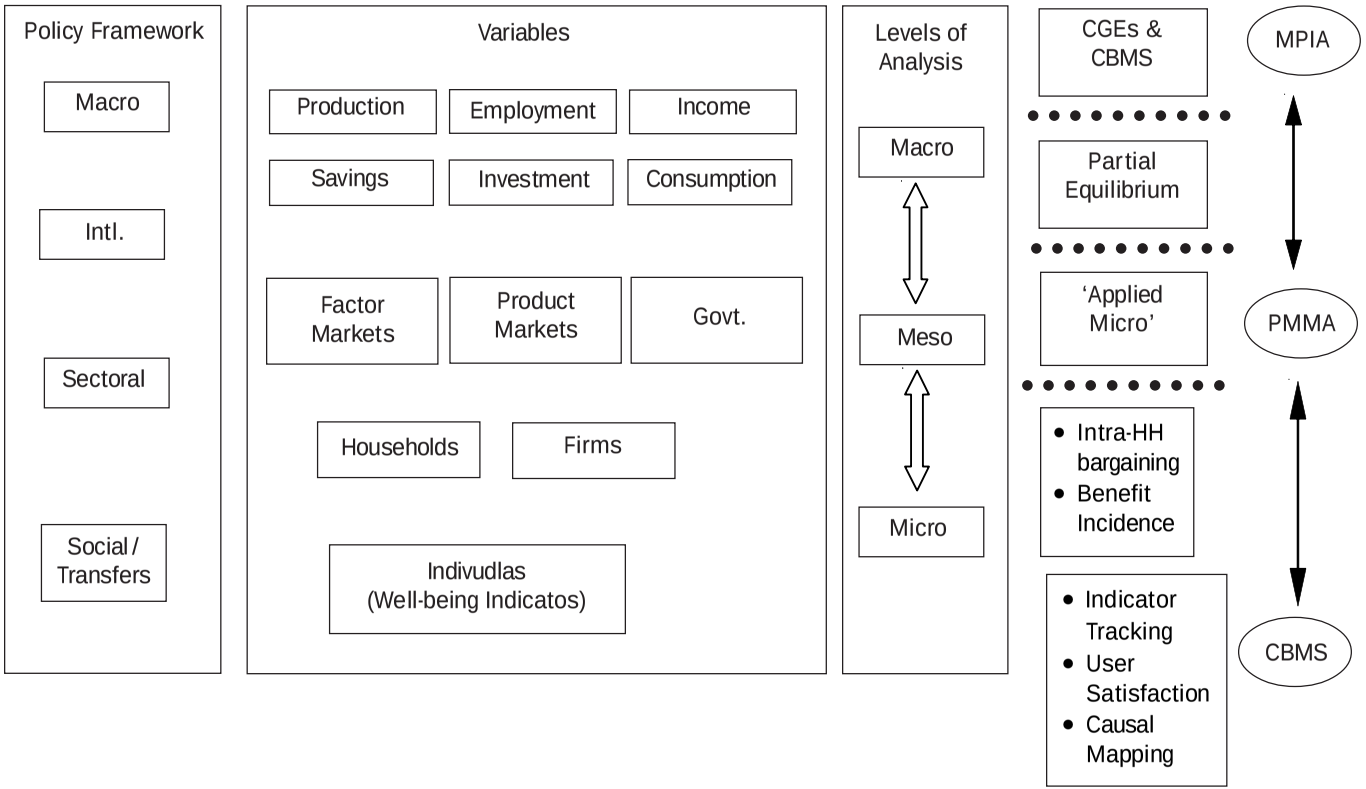
Causal mapping

Causal maps are used in the PRA tradition (see Roche, 1999 and Appendix A for an example from Burma). Participants usually draw a causal tree showing linkages between policies or programs and select well-being outcomes. Often, this is done in the context of focus group discussions or semi-structured interviews. Causal mapping has been used to assess the impact of programs but could be extended to certain types of policies where key transmission mechanisms are well known. This tool is best used to provide a richer analysis of the processes generating impacts (or the lack thereof) rather than to assess either the sign or magnitude of impact, although in certain circumstances these may be possible.[8] Causal mapping is a technique which has not figured prominently within MIMAP but could be incorporated within the CBMS's activities (apparently the CBMS in Bangladesh is planning to incorporate PRA techniques).

A second way of categorizing approaches is based on the types of transmission mechanisms and policies which the different approaches are best suited to address. Figure 1 schematically presents an analytical framework based on these distinctions. The panel on the left hand side distinguishes between macro, external, sectoral, and social policy (including transfers). The next two panels distinguish between variables which operate at macro, meso, and micro levels of analysis. The macro level includes such variables as aggregate production, employment, income, savings, investment, and consumption (demand). The meso level is concerned with factor and

[8] There are problems which arise when trying to ascertain the sign or magnitude of impact when using PRA techniques of this sort: 1) there is no common well-being unit across communities which makes comparisons of levels and even trends problematic; 2) there are difficult issues concerning the 'representativeness' of findings, even if site selection has been done with a view to generalize results; and 3) even if the first two problems are resolved it is extremely difficult to make claims about magnitudes unless the categories are quite broad (e.g., large, medium, and small), there is great uniformity in results and it is clear that the policy under review has the major effect on the well-being outcome in question (the 'near necessary condition' again).

Figure 1. Types of policy and levels of analysis



product markets as well as government. The micro-level includes firms, households, and individuals within households.

It should be noted that the distinctions between levels of analysis and policy assessment are not absolute, and that there are examples of systematic linkages between them (such as micro-simulation techniques in the context of CGEs[9]). Nevertheless, the framework is a useful way of distinguishing the approaches as it points to a number of relevant differences for purposes of integrating approaches.

With respect to MIMAP, MPIA has tended to focus on macro-meso linkages, subsequently transmitted to households, in the CGE framework. While CGEs explicitly link macro, meso, and micro levels of analysis, they are more macro/meso-focused in that the analysis of core activities such as production and consumption usual remains fairly aggregated.[10] For example, the archetypal CGE for a small open African economy presented in Decaluwé et. al. (1999b) contains six sectors (traditional agriculture, export crop, mining, industry, service and administrative service), five primary factors of production (land, agriculture capital, capital, unskilled labor and skilled labor) and six groups of households (rural, small landowner, large landowner, urban low education, urban high education and capitalist). Production activities are decomposed into two agricultural activities and four non-agricultural ones. The lowest level of disaggregation includes composite labor, which is decomposed into skilled and unskilled categories, and composite agricultural capital, which is a function of agricultural capital and land. CGE models are best suited for determining the impact of major policy changes such as macro or trade policy rather than, say sector-specific policy shifts (which require greater disaggregation and where general equilibrium effects are unlikely to be as important).[11]

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[9] Decaluwé et al. 1999b; Cockburn (2001).

[10] They are both 'vertically' aggregated, i.e., across sectors, and 'horizontally' aggregated, across households (though see the discussion on microsimulation).

[11] Arulpragasam and Conway (2002) and World Bank (2002).

PMMA has emphasized meso-micro links in the tradition of applied microeconomic analysis (among others). It has relied on, or intends to use, a range of techniques to assess impact including, *inter alia*: partial equilibrium analyses of public spending and sectoral policy; labor market modeling, intra-household modeling, and benefit incidence analysis. The modeling exercises operate at a more disaggregated level than CGE modeling. They are better-suited to gauge the effects of sectoral policies, such as price or taxation policy in one product market, and/or to provide a much more detailed understanding of the operation of key markets (e.g., labor) and institutions (e.g., households). The non-modeling work, namely benefit incidence analysis, examines policy effects where transmission mechanisms are direct and need not be modeled.[12]

CBMS has devoted much more attention to poverty monitoring and less so to impact analysis. Much of the work completed to date has focused on creating poverty profiles for purposes of poverty monitoring and planning. Nevertheless, in so far as it is intends to address impact-analytical issues, its focus is most likely to be on micro level processes and/or micro-meso linkages. The main reason is that there are real difficulties in aggregating the types of data most needed for impact analysis, generated by CBMS-type systems. In addition, CBMS-type systems[13] of impact analysis are likely to be more reliable when the transmission mechanisms in question are more direct and have fewer higher order effects which may not be known.

Summary

There are two key characteristics which define impact evaluation: it is concerned with well-being outcomes; and it requires establishing

[12] In Figure 1, this would be represented as a direct link between sectoral policy (left hand panel) and households, which would not be mediated by meso-level institutions.

[13] The one exception here would be tracking output/outcome indicators, but this is arguably not the real value-added of CBMS, and could be done in the context of a representative household survey.

causal links between policy measures and the well-being outcomes in question. Techniques of impact analysis have been distinguished according to how they establish causal links and whether they concern themselves primarily with macro, meso or micro transmission mechanisms (and associated types of policy). Table 1 provides a summary account of the main distinguishing characteristics of the approaches and situates the work of the MPIA, PMMA and CBMS networks within the ensuing framework.

A typology of ways of integrating approaches

The objective of this section is to specify a number of differences among approaches to impact analysis and then discuss different ways of integrating them. The discussion draws on the typology of differences presented in Section 2 and serves as a conceptual basis for the discussion of concrete ways of integrating approaches within MIMAP in the following Section.

Table 1. A typology of approaches to impact analysis

Forms of Impact Analysis	Level of Analysis		
	Macro	**Meso**	**Micro**
1. Formal Modelling	CGE (MPIA)	Partial Equilibrium (PMMA) Labour Market Modelling (PMMA)	Intra-household Modelling (PMMA)
2. Estimating the Distribution of Benefits			Benefit Incidence (PMMA)
3. Tracking Output/ Outcome Indicators			Indicator Selection and Tracking (CBMS)
4.Ascertaining User Satisfaction			Report Cards, Focus Groups (CBMS) Household Survey Modules (PMMA)
5. Causal Mapping			Focus Groups (CBMS)

Definitional and conceptual issues

The fundamental question which arises in discussions of integrated approaches is 'integrating what'? Specifically, what aspects of the different approaches to impact analysis are to be integrated? Often, this is phrased in terms of the 'qualitative/quantitative' distinction (Carvalho and White, 1997; Bamberger, 2000). This terminology is misleading, however, and tends to obscure core differences between approaches (see Kanbur 2001 and Shaffer 2002). Besides, it would not go very far in distinguishing the three components of MIMAP which have all relied heavily on 'quantitative' techniques (by most definitions of the term).

There are three main characteristics of the approaches to impact analysis discussed in Section 2 which are relevant for purposes of integration:[14]

- First, macro, meso and micro levels of analysis;
- Second, formal vs. non-formal representation of transmission mechanisms (i.e., modeling vs. other approaches); and
- Third, people's perceptions vs. inter-subjectively observable indicators of well-being.[15]

Integrating approaches

There are many schemes for categorizing ways of integrating different data types or methods, most with reference to the qualitative/ qualitative divide. A short-list includes distinctions between: sequential and simultaneous mixing (Ravallion, 2001); iteration, linkage, triangulation and convergence (Booth, 2001); primary, lead and

[14] A further issue prominent in the literature concerning the integration of statistically representative and non-representative approaches is less relevant here.

[15] People's perceptions can be transformed into inter-subjectively observable indicators if they are scaled, counted, proxied, etc. Nevertheless, the process of transformation raises issues which do not arise when using an inter-subjectively observable indicator in the first place.

follow-up functions (Hentshel, 2001); parallel, sequential and iterative approaches (Rao and Woolcock, 1992) and confirming, refuting, integrating (Carvalho and While, 1997).

Arguably, all of these distinctions are really derivative of two broad ways of integrating approaches (Bryman, 1998). The first involves *combining* approaches so that the results from one serve as inputs in the data collection or analysis of the other. The second involves *comparing* the results of different approaches conducted separately with a view to enrich or confirm/refute the analysis undertaken by one or the other. Table 2 depicts the relationship between these ways of integrating approaches and the three aforementioned characteristics which they are attempting to integrate. The discussion which follows is meant to be illustrative and not exhaustive of the ways of integrating approaches.

Scenario #1: combining macro, meso and micro processes

In this case, tools used, or results obtained, at one level of analysis are used in data collection or analysis conducted at another level by another approach. An example involves different ways of integrating household modeling with the CGE context (Cockburn, 1999 and Robillard et. al., 2001)

Scenario #2: comparing macro, meso and micro processes

Here, results from analyses conducted separately at different levels are compared with a view to enrich the analysis, or at times, to confirm/refute findings. This can be done in different ways but the general

Table 2. Integrating methodologically different approaches

Characteristics of Approaches	Combining	Comparing
1. Macro/Meso/Micro Focus	#1	#2
2. Informal vs. Formal Analyses of Processes	#3	#4
3. Perceptions vs. Intersubjectively Observable Indicators	#6	#7

idea is to put together different pieces of the same puzzle.

Scenario #3: combining 'nonformal and formal' analyses of processes

There are a range of issues within this category. Some relate to ways of using 'informal' analyses of causal pathways (i.e., anthropological or 'qualitative'), generated by focus groups or interviews, to inform model construction. Examples include use of 'non-formal data' to identify instruments to address endogeneity issues (Rao et. al., 2001, Ravallion 2001), to estimate levels of variables for which household survey data do not exist (Hoddinott and Haddad, 1995), to select variables for inclusion in models (Barrett, 2001), to suggest the direction of causality (Place, 2004), to inform household survey construction (Holland, 1997), to interpret counterintuitive regression results (Rao and Woolcock, 2002), and to generate testable hypotheses (Maxwell, 1998). Likewise, formal model results may be used to inform the content of focus group discussions or semi-structured interviews with respect to the importance of different causal processes (Shaffer, 2002b), as well as the desirability of policy prescriptions derived from formal analyses (Maxwell, 1998).

Scenario #4 comparing 'nonformal' and 'formal' analyses of processes

This scenario involves comparing methodologically different analyses of similar processes of change. A good example involves the comparison of econometric and anthropological case studies of differentiation in rural Kenya to arrive at a common understanding of the processes in question (Francis and Hoddinott, 1993).

Scenario #5: combining perceptions and inter-subjectively observable indicators

One concern here is to use econometric tools to address the potential biases associated with the reliance on 'subjective' perceptions of well-being. An example is the work of Ravallion and Lokshin (1999) who attempted to control for latent personality characteristics when analyzing trends in 'subjective' well-being. Another issue involves

analysis of the interrelationship between 'subjective' well-being and standard inter-subjectively observable indicators.

Scenario #6: comparing perceptions and inter-subjectively observable indicators

It is important to determine if the well-being indicators used in most formal models, and collected in many standard profiles, are those which correspond to the key aspects of well-being identified by people. Some studies which have addressed the question have found big differences between the two (Shaffer, 1998).

Integrated impact analysis within MIMAP

The present Section brings together the analyses of the previous two and applies them to MIMAP. Specifically, it uses the typology of differences between approaches (Section 2) and the discussion of ways of integrating them (Section 3) as the basis of proposals for integrated impact analysis with MIMAP. The following section discusses general options while the next one addresses thematic ones.

General options

Table 3 brings together the approaches to impact analysis discussed in Section 2 with the different scenarios of integration in Section 3. The respective contributions of PMIA, PMMA and CBMS within each scenario are highlighted.

Scenario #1

This is already well underway within MIMAP. It involves systematically integrating the CGE-based macro-level analysis of MPIA with the meso-level analysis conducted by PMMA. To date, CGE-based micro-simulation has been the method of choice used in this context (Cockburn, 2001). There are ongoing plans to integrate intra-household allocation issues within the CGE framework as well to assess well-being outcomes at the level of the individual, not the

Table 3. Integrated impact analysis within MIMAP

Ways of Integrating Approaches	Formal Modelling	Benefit Incidence	Tracking Output / Outcome Indicators	Ascertaining User Satisfaction	Causal Mapping
#1Combining Macro, Meso and Micro Processes	MPIA/ PMMA				
#2 Comparing Macro, Meso and Micro Processes	MPIA/ PMMA	PMMA	CBMS	CBMS	CBMS
#3 Combining Formal and Non-Formal Processes	PMMA				CBMS
#4 Comparing Formal and Non-Formal Processes	PMMA				CBMS
#5 Combining Perceptions and 'Objective' Indicators	PMMA			CBMS	CBMS
#6 Comparing Perceptions and 'Objective' Indicators	PMMA			CBMS	CBMS

household.

Another possibility would be to integrate detailed partial equilibrium analyses of a particular sector within a CGE framework if general equilibrium effects were considered to be important. This would facilitate more concrete explanation of how impacts are being transmitted within a sector where relevant policy change is ongoing or planned (e.g., agricultural price policy, etc.).

Scenario #2

This is likely to be the best way, at present, to link the different strands of MIMAP. The main reason is that most of the other scenarios would require more far-reaching changes in the nature of data collection and analysis. Given that activities have been underway for some time

and future activities have already been planned, major methodological changes are probably not feasible. This scenario involves putting the different types and levels of analysis together *ex post* and integrating them around a common theme. It could potentially involve all five types of impact analysis and all three components of MIMAP, and address different types of policy and transmission mechanisms. The following Section discusses scenario 2 in more detail with reference to health and gender.

Scenario #3 and #4

Both of these scenarios would entail incorporating a 'causal mapping' dimension with CBMS and/or making use of techniques such as focus group discussions and semi-structured interviews. The objective for scenario #3 would be to inform model construction in any number of the ways identified in Section 3, whereas for scenario #4 it would be to determine if the same processes are identified, formally and informally, as central conduits for the transmission of impact. It is likely that fruitful collaboration would be mainly between the CBMS and PMMA teams as the MPIA's activities are at a higher level of aggregation. The key ingredient of success here is to determine specific information gaps and research questions prior to embarking on the exercise.

Scenario #5 and #6

Both of these scenarios would entail incorporating a 'subjective' welfare module or other PRA-type techniques within CBMS systems. The core objective would be to determine both the constituents of well-being in different communities as well as trends over time. These exercises could be done in conjunction with either user satisfaction or causal mapping activities. In Scenario #5, econometric analyses could be performed on these data in different ways. For example, the World Health Organization (WHO) has recently attempted to enhance cross-country comparability of self-report data in household surveys through the use of vignettes. Specifically, respondents are asked to

rank a number of hypothetical scenarios (vignettes) concerning health status, mobility, etc., in terms of the perceived severity of deficits.[16] These exogenous vignette data allow for the identification of socioeconomic correlates of both the level of the latent variable (health, mobility, etc.) as well as the cut-off points between ordinal ranking categories (using a hierarchical ordered probit model) (Tandon et. al., 2001). In other cases, panel data estimation is used to control for (time-invariant) psychological traits affecting perceptions (Ravallion and Lokshin, 1999). Another direction would be to examine the relationship between perceptions of well-being derived from PPA or like techniques and inter-subjectively observable indicators, chosen by the analyst. There are possible areas of convergence here with activities being undertaken within PMMA on multidimensional measurement of well-being (Duclos et. al., 2000).

Thematic options

A number of thematic issues may serve as overarching frameworks for integrating the strands within MIMAP. Two, which have figured prominently in the proposed future activities of the PEP network (linking MPIA, PMMA and CBMS), are health and gender.

Health

Health provides a potential integrating framework for scenario 2. All five approaches to impact analysis may be integrated within a common analytical framework. CGE modeling could be used to examine high-order general equilibrium effects of health policy such as production externalities. Applied microeconomic analyses, such as household production or reduced form models, may examine the effects of human

[16] For example, in the mobility module in the WHO Multi-Country Study, respondents are asked to rank the following scenarios (in ascending level of mobility deficits) into a number of ordinal categories: Vignette 1 – Paul is an active athlete who runs long distance races; Vignette 2 - Rob is able to walk distances of 200 meters without problems but feels breathless after walking one kilometer; Vignette 3 – Margaret feels chest pains and gets breathless after walking distances of up to 200 meters, etc.

capital investments on health outcomes (Strauss and Thomas, 1995). Vignettes may be incorporated in questionnaire modules on health status and the ensuring information may be subsequently incorporated in econometric models to facilitate consistent interpersonal comparisons. Results from user satisfaction modules may be used to ascertain the quality of service delivery while tracking output indicators closely related to outcomes, such as immunizations, will provide evidence on the impact of health policy. Finally, causal mapping exercises will provide more information on the processes generating - or failing to generate - impact, with particular relevance for service delivery issues (see the sample causal map in Appendix A which addresses health issues). All of these pieces of the puzzle are relevant to understanding the impact of health policy and ideally, improving its performance.

Gender

Gender is another thematic issue which may serve to integrate the different components of MIMAP. Once again, scenario 2 provides the ideal case. Gender-differentiated effects of policy change may be integrated within CGEs by incorporating 'home production' features including gender disaggregated time use, labor supply, work/leisure choice, etc. (Fontana and Wood, 2000 and Fofana et. al., 2001). There is a long history within applied microeconomics of testing for gender discrimination within households (Deaton, 1997) in addition to modeling intra-household decisionmaking (Agarwal, 1997). User satisfaction modules and output/outcome indicators should be gender-differentiated to gauge the differential policy impact on males and females. Finally, gender analysis should imbue causal mapping so that gender specific processes and gender specific outcomes are identified. In all of these cases, gender provides a unifying framework to gauge the impact of public policy.

Summary and recommendations

Integrating the MPIA, PMMA and CBMS strands of MIMAP has been a preoccupation of the program (IDRC/MIMAP 2000, 2001). Most recently, it has been suggested that 'much of the interactions between PEP networks would emerge naturally and informally as researchers come to appreciate the contributions researchers from other networks can make' (CREFA/AKI, 2002). The present paper moves one step beyond this approach and specifies concrete ways of integrating activities undertaken by MIMAP's main components.

Two preliminary sections of the paper provided the groundwork for Section 4 which proposed ways of integrating MIMAP's activities around the theme of impact analysis. Section 2 distinguished the many techniques of impact analysis according to how they establish causal links and whether they concern themselves primarily with macro, meso or micro-level transmission mechanisms (and associated types of policy). Drawing on this discussion, Section 3 presented a typology of ways of integrating different approaches along with six scenarios which provided examples of how to do so. Section 4 applied this analytical framework to MIMAP. It suggested a number of general ways to integrate approaches as well as ways to integrate around common themes of health and gender.

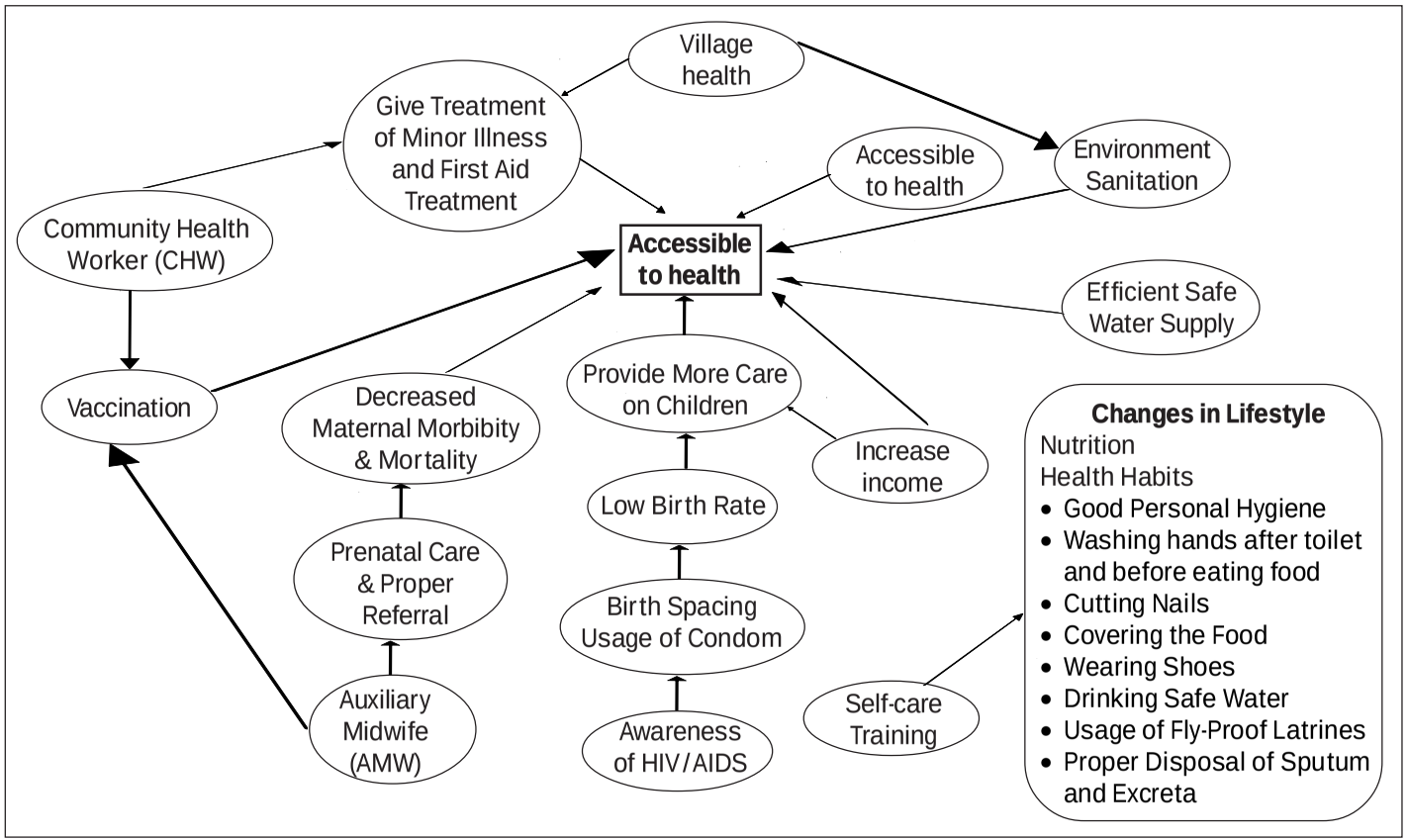
One important conclusion which emerges from the analysis is that the CBMS strand has, potentially, an extremely important role to play in integrated impact analysis which as yet, has only partially been fulfilled. Given that the CBMS team has expressed an interest in incorporating tools of impact analysis within their activities (CREFA/AKI, 2002; 40), it may be timely to reconsider the methodological approach adopted to date with a view to modify it. Specifically, there is a good case to incorporate more open-ended questions within CBMS questionnaires, to use PRA-type techniques to allow for a wider range of issues to be discussed, to gather information on subjective well-being and to collect output indicators. The CBMS program seems to be partially moving in this direction as some countries are now experimenting with different tools and indicators. The core challenge

will be to structure this in such a way so that it provides useful and policy-relevant information directly, or indirectly, via its role in model construction.

A second conclusion is that, at present, the best integrating framework is likely to be scenario 2 (comparing macro/meso/micro processes), which presents results undertaken independently by different MIMAP teams within a common framework. Linking scenario 2 with a common theme, such as health and gender, was likely to constitute best practice. In this context, the different approaches to impact evaluation all provide different but necessary pieces of the same puzzle.

A final point concerns future activities which aim to combine or compare different approaches. It is important to spend time determining exactly what types of information are required for what purposes prior to embarking on data collection/analysis. To provide value-added, integrated approaches have to fit together in a coherent, policy-relevant way. Almost always, they have to do so by design.

Appendix A. Sample causal map of health policy and outcomes



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