A Health Systems Research mapping exercise in 26 low- and middle-income countries: Narratives from health systems researchers, policy brokers and policy-makers

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Preface

A team from the Institute of Tropical Medicine (ITM), Antwerp was asked by the Alliance for Health Policy and Systems Research to map health systems research, health systems research capacity and knowledge translation in a number of low-and middle income countries. The team drew on Emerging Voices and ITM alumni to conduct interviews with high-level policy makers, health systems researchers and policy brokers in 26 LMICs. This paper summarizes the key findings.

Acknowledgements

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Abstract

There has been increasing attention for health systems research in the world, including in low- and middle income countries, with recent developments both in terms of its definition, and in the evolution of theory and methodologies.

In 2011, a team from the Institute of Tropical Medicine (ITM), Antwerp was tasked by the Alliance for Health Policy and Systems Research to map health systems research capacity, health systems research undertaken and policy uptake of this research in a number of low-and middle income countries. Using an innovative and cost-efficient approach, the team drew on winners of a 2010 essay competition (Emerging Voices) linked to the First Global Symposium on Health Systems Research and ITM alumni to conduct interviews with senior health systems researchers, high-level policy makers and policy brokers in 26 LMICs.

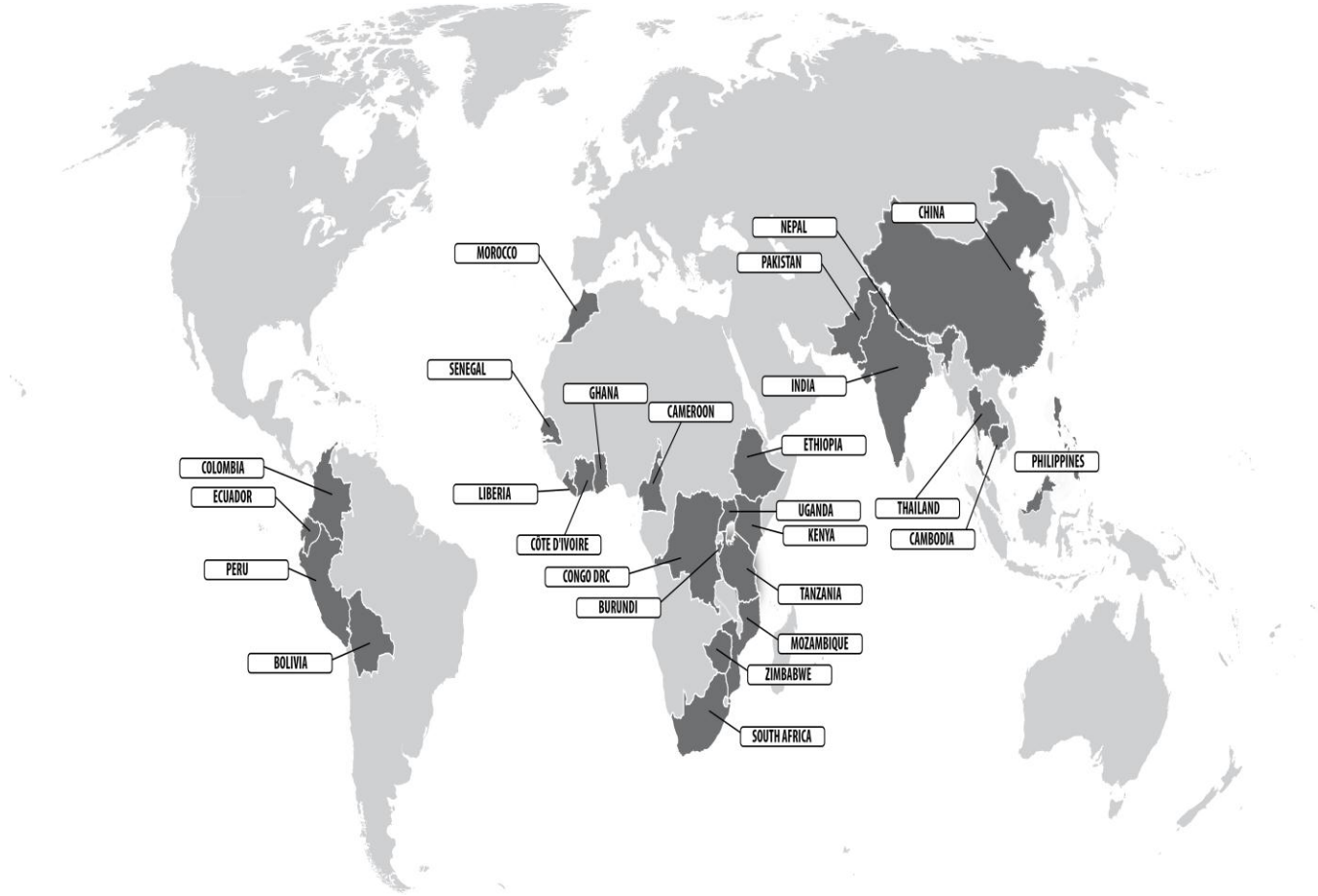
Their narratives and stories provide insight into how these three categories within the research-policy continuum conceptualize health systems research, interpret their roles, assess the health systems research capacity in their country as well as the scope of health systems research undertaken, and assess potential policy uptake. Health systems research as an emergent discipline in these contexts is dependent on a cluster of enabling factors, identified in this research: charismatic and strategically thinking individuals with a talent for networking, technical competence and scientific credibility, appropriate international alliances and trends, emergent local knowledge translation structures and increasing national ownership of research agendas, more and better training courses for researchers as well as workshops for decision makers to make them more attuned to each others' world and constraints, increasing trust between decision makers and researchers, a critical mass of health systems researchers and competing institutions 'able to deliver', an entry point for health systems research in decision making circles, sufficient domestic and international funding, and even political transitions, shock events or other windows of opportunity. However, country contexts diverge widely. Where this critical set of enabling factors has not yet been established, health systems research remains undeveloped; nevertheless, in most LMIC countries studied, health systems research appears to be gaining momentum, and its potential for informing policy is increasing.

Introduction

The First Global Symposium on Health Systems Research organized by the World Health Organization, the Alliance of Health Policy and Systems Research, and other United Nations health research programmes in November 2010 in Montreux, Switzerland, brought together the findings of a series of conferences and articles with interest in health systems research. Up to this point, the diverse thematic and methodological approaches in the field of health systems research had not been synthesized into an agreed disciplinary approach, with relatively little clearly defined, agreed upon and documented about the field and its scope. The complexity of health systems research and the lack of a common understanding are rooted in its multi-disciplinary and interdisciplinary nature (Sheikh K et al., 2011). The fact that the territory of health systems and health policy are shared by a field of actors with very different understanding and interests makes health systems research an utterly complex, and politically and socially sensitive field (Bennet S et al., 2011; Gilson L et al., 2011). There is a clear need to map what is understood as health systems research by different stakeholders and what health systems research is available worldwide - a gap this qualitative study in 26 low and middle income countries now seeks to address.

Through semi-structured qualitative interviews with three categories of stakeholders - health systems researchers, policy brokers or entrepreneurs and policy makers - in 26 low and middle income countries (Figure 1), this study sought to explore local understandings of health systems research (HSR), to map what health systems research is currently available in those countries, and to identify enablers and bottlenecks for health systems research, knowledge translation (KT) and policy-uptake.

Figure 1: World map of the 26 countries with interview teams



The first section of this paper presents this conceptualization of health systems research and its scope, synthesized from the rich narratives obtained through the semi-structured qualitative interviews. The second section explores the interviewers' analysis of the characteristics of the three categories of interviewees: health systems researchers, policy brokers or entrepreneurs, and decision makers. A third section focuses on what capacity for health systems research is available at the country level and more particularly what is lacking. The fourth section brings the available evidence together to represent what health systems research is undertaken in LMICs. Section five examines the enablers and barriers for health systems research, knowledge translation and policy-uptake identified by the interviewees. As the aim of the study was also to make the health systems research field more attractive for young researchers, section six highlights some of the recommendations given by the interviewees. Section seven discusses some of the general trends and patterns that were found when analyzing the interviews and narratives about HSR capacity, HSR done nationwide and knowledge generation. Despite current constraints, the paper concludes that the current moment is an opportunity to further strengthen and develop the HSR field.

Methods

The ITM researchers drew on teams of Emerging voices (EV) [1] and ITM alumni, and local public health researchers to conduct interviews with high-level policy makers, health systems researchers and policy brokers in 26 LMICs, using a purposeful sampling representing diversity within the entire group. The threefold aim was to map HSR done (nation-wide), HSR capacity (nation-wide) and knowledge translation in a diverse set of LMICs (triangulated from three different sources, with each of the three categories of interviewees potentially holding different opinions). Qualitative semi-structured interviews[2] were conducted in 26 LMICS by country teams (consisting of one interviewer and one 'reporter') (see Table 1 for an overview of the interviewees by category and WHO region), using a common semi-structured question guide developed by the ITM research team in collaboration with staff of the Alliance. Country teams comprised at least two members, in most cases composed of one EV and one alumnus. In China, there were two interviewer teams, one based in Gansu province, another in Beijing, bringing the total number of country interviewer teams to 27. The country teams were briefed by the ITM research team through a combination of telephone, Skype, email, and in some cases direct contact, with distance-coaching provided for all teams during the implementation of the research.

[1] Cf. www.ev4gh.net and www.hsr-symposium.org for more information about the Emerging Voices for Global Health initiative.
[2] Cf. Annex B for the HSR questionnaires for health systems researchers, policy brokers and policy makers.

Table 1: Interviewees by category and by WHO region[3].

	Policy maker	Policy broker	Health systems researcher
AFRO	12	13	12
AMRO	5	5	5
WPRO	2	2	3
SEARO	5	8	5
EMRO	1	1	3

In each country context, the country teams were responsible for identifying at least one representative from each of the three categories of interviewee: health systems researcher, policy maker and policy broker. Verbal consent was obtained for each interview, and for the publication of aggregated findings, while guaranteeing anonymity for individual respondents. Country teams advised respondents that the aim of the project was to provide a composite overview of HSR in LMICS, examining broader patterns and trends, with the 3-5 interviews per country sufficient to provide a reliable indication of activity without claiming to be a comprehensive analysis of HSR (capacity) and KT in any one country. Both members of the country teams took notes, with interviews taped and transcribed where consent was given. The interviews were done in the local language, in English or in French, with the final reports translated where necessary and forwarded to the ITM research team for analysis in English or French.

The research process was relatively inductive, using a 'grounded theory' perspective (Strauss et al., 1990) - given the aim of the research was to seek local understandings of HSR, no prescriptive definitions of concepts like health systems research, knowledge brokers or entrepreneurs were offered. The question lines for these three categories of interviewees all had the same three focal points (HSR, HSR capacity, and KT) but the importance of the focal points differed for the three categories - for example, questions on HSR nationwide and HSR capacity got a stronger focus in the interviews with health systems researchers than with decision makers, while the opposite was true for KT. The question guide developed in collaboration with the Alliance, was adapted for each interviewee by the country teams.

[3] The WHO Regions represented are: WHO African region (AFRO); WHO region of the Americas (AMRO); WHO Western Pacific region (WPRO); WHO South-East Asian region (SEARO); WHO region of the Eastern Mediterranean (EMRO).

Apart from the three points of interest (HSR, HSR capacity and KT), it was also agreed to focus on three roles in countries - doing health systems research, (health policy) decision making and knowledge brokering. In each sampled country, country teams had to identify senior interviewees with these professional roles (in collaboration with the ITM team of researchers). It was of course possible that interviewees combined more than one role. As for the knowledge brokers, it was acknowledged that these people (conceived loosely as influential people at the interface between health systems researchers and decision makers) could be situated in various settings or institutions. Country teams were thus encouraged to do a mapping of health system research knowledge brokers in their country before trying to identify any individual for interview.

In each country, interviewees assuming these roles were thus purposively selected and interviews were done with at least one senior researcher, a policy broker, and a policy maker. In some countries, more than three interviews were conducted. Most of the interviewees were national citizens, but in a few cases "knowledge brokering" expatriates were also interviewed.

The interviews allow for rich narratives and more insight into HSR and mechanisms of KT in LMICs. As there was no initial analytical framework apart from the three focal points, the aim was inductive: we let the qualitative data speak for themselves, to the extent possible. For example, how do interviewees define health systems research, what is the role they see for knowledge brokers, etc. The findings section reflects the contents of the interviews; the extensive literature review was only done once the interviews were coded and analyzed, to avoid pushing interviewees' narratives into predefined categories.

The interview reports were coded and analysed in Nvivo 9. The coding tree was developed along the lines of the three focal points, and themes and sub-themes were differentiated and coded as the ITM research team proceeded in the analysis. Themes were modified and/or merged if this seemed appropriate. Inevitably, qualitative information on some themes turned out 'richer' than on other themes, with obvious consequences for the write-up of the analysis.

Findings

1. Health Systems research conceptualization

As we were interested in the way our interviewees define HSR (rather than starting the interview with our own definition of it), we asked all health systems researchers and selected policy brokers and policy makers about how they perceive health systems research.

HSR is clearly perceived as a relatively new and still evolving field, in the opinion of our interviewees: "*a Cinderella field in public health*". From the interviews it was obvious that there is no academic consensus on the conceptualization of HSR, though many perceive it as a multidisciplinary field. Some health systems researchers provided elaborate and precise

definitions of HSR; others less so. Unsurprisingly, definitions varied from one researcher to another.

A number of respondents argued that you first have to define 'health systems' before you can say what HSR is about, though this is again easier said than done - one respondent claimed "*When you speak about health systems, you are confronting a monster of several heads, and you do not know which one is first*." Many are aware of WHO's rather broad definition of health systems "all organizations, people and actions whose primary intent is to promote, restore, or maintain health. " (WHO, 2007a), though most considered the focus of HSR to be narrower than this.

Many interviewees focused on the WHO building blocks as a structure for explaining HSR: HSR is research that explores one or more of the WHO building blocks. For most interviewees a focus on one building block already suffices to use the term HSR. There was, however, little evidence of a "systems" perspective (de Savigny et al., 2009) among most interviewees, with no reference to notions of complexity, feedback loops and interdependency.

Most agree that HSR is more about the topics than about the methodology. In other words: it is not really a specific methodology that defines HSR. A range of methods (quantitative, qualitative, mixed, …) can be used to research health systems. A number of interviewees emphasized that HSR is done both by people with a positivist perspective as well as researchers with a social constructivist perspective. Hence, the discipline has to find a bridge between a quantitative and a qualitative research paradigm, and this is not an easy feat, acknowledged some interviewees. It's "*a complex field, often reflective of one's world view*." (Southern African researcher). There is not even consensus on the name - some interviewees would like to use other labels instead of HSR - like health policy and systems research to mention only one.

As for the topics explored in HSR, there is a huge variety. Naturally, a lot of HSR focuses on WHO building blocks (and particularly on the WHO building blocks in vogue like health financing), but lots of other issues were also mentioned as possible research topics, like social determinants, global health buzzwords and current research trends (like Non Communicable Diseases, the MDGs, Universal Health Coverage, Health Systems Strengthening), vertical programs, community participation, health sector reform, scaling up of interventions, monitoring national health indicators, health care in fragile countries, health & an aging society. Few of the interviewees mentioned an explicitly global focus though - most concentrate on their own nation, inspired by the international debate however. A focus on the public sector dominated, but in some cases, the private sector was also singled out as a sector on which HSR needs to be done.

A majority of respondents agree that HSR is about helping the health system move in the right direction - the overall goal should be to improve the performance of the health system. One interviewee from a South-East Asian country said HSR should identify problems, identify solutions, and then deal with how to implement these solutions. Most interviewees also agreed that HSR should focus on the real current needs of the country (instead of engaging in

rather "*esoteric*" research, in the words of one respondent), and take into account the feasibility, both in terms of resources and politically: "*Recherche action, surtout une recherche qui doit nous aider à améliorer la santé de la population. Pas une recherche pour faire de la recherche.*"[4]

Respondents were divided on agenda setting for HSR. Policy makers tended to stress that research should be in line with their needs, not just the researchers' perceptions of the country's needs. Most health systems researchers, while acknowledging the need for policy relevant HSR, say that they should also be able to put something on the agenda themselves, if the country's needs require so. So HSR should not just be about 'producing on demand' of policy makers. Research issues should not just be 'policy driven' but also 'researcher driven' in other words (although interviewees are quick to point out that 'researcher driven' does not mean 'focusing on the researcher's own interest').

At the same time, a number of interviewees were cautious about their claims for HSR, stressing that HSR needs to be humble, and its possible impact not exaggerated. A respondent from a South-East Asian country put it like this: "*If health systems research can provoke a discussion, which in turn can lead to a movement, and then inspire the policy discussion to some extent, that's a good feat. The policy will still be the 17th best (instead of the 1st best, or even the second or the third best). If HSR provokes discussion, which then leads to small changes, the job is done.*" But statements like these were not made everywhere, the setting seems to play a role here - in some cases, health systems researchers were far more bullish about their impact.

Interviewees agree that HSR can range from simple project evaluations to fundamental research and large research consortia projects; many interviewees stressed though that operational and implementation research is a very important part of HSR, as is participatory action research. And one interviewee even emphasized that teaching and capacity building are also part of HSR.

A health systems researcher, who exemplified the opinion of many of his colleagues, mentioned that HSR "*shouldn't just be done as isolated (self-driven), fragmented, personal or even institutional efforts, but in a coordinated, structured and systematic way, for example along the lines of a roadmap or a national research agenda, which came into being after consultation of many stakeholders and in collaboration with the Ministry of Health*."

Interviewees said HSR can and needs to be done at all levels: global, national, state, regional and even district level. Many interviewees find the latter - HSR at the district level, for example by district officers - particularly important, and policy makers even more so. HSR can be prospective and retrospective.

[4] English translation of the French quote: "*Action research, especially research that should help us to improve the health of the population. This is not research for the sake of research. "*

A few interviewees also came up with a 'negative' definition of HSR - by saying what it is not (for example: clinical research, basic biomedical research, even epidemiological research for some). As one interviewee from a Southern African country sadly noted: "*Our researchers are mainly interested in dissecting the mosquito.*" (he obviously did not consider that health systems research).

Some distinguished between what they called more *normative* (like development and improvement of data platforms, such as household surveys, health indicators, etcetera) versus *policy related* work (like research on the cost-efficiency of a certain intervention). Speaking of the former, in some countries interviewees stressed how important baseline indicators and a functional health information system are, as they allow a clear picture and prioritizing. This quote is telling: "*In X it's a total hotchpotch. We don't know what's happening. So it's like a blind or headless chicken running here and there*."

HSR was rarely linked to other sectors in the responses - a multi-sectoral, holistic view of health taking into account social determinants was not raised spontaneously when health systems researchers were asked about HSR.

2. Role & Characteristics of health systems researchers, policy brokers and policy makers

In this section we present the characteristics of the three categories of actors related to HSR, as defined by the interviewees: health systems researchers, policy brokers or entrepreneurs, and decision makers. Obviously, "*the*" health system researcher/policy broker/policy maker does not exist. There is huge variety for all three kinds of people. Also, the categories were not always clear-cut. In many instances, people played two, sometimes even three roles, depending on the setting; they "wear different hats", or had played a different role in the past. In some countries there might be a real gap between researchers and policy makers, as if they are two distinct communities, while in other cases there are many platforms and opportunities for smooth interaction and communication (see below). Our three categories of interviewees had a clear notion of the characteristics and role of health systems researchers and decision makers; for policy brokers we mostly relied on the interpretation of policy brokers themselves.

2a) Health Systems researchers

The characterization of health systems researchers presented a demanding complex of personal and professional attributes, with high expectations of their productivity and their capacity to advocate and influence policy outcomes.

For some interviewees, health systems researchers should stay 'pure' - i.e. focus on research, and then provide evidence to policy makers. Most health systems researchers interviewed, however, said health systems researchers should be pro-active and even opportunistic if need be, i.e. target policy makers and actively try to influence policy - engage in action-oriented research (or play a broker role, in effect). In the words of one respondent: "*Nobody wants to*

hug his evidence forever". In two countries, a South-East Asian and a Central-American one, interviewees came up with the same striking metaphor: " *Researchers should 'dance with the policy makers' which means they should be interested in what might attract the policy makers and know exactly where they can help, rather than waiting until the policy makers ask to provide advice on issues of interest to them*." Somebody else put it like this: health systems researchers need to have a '*sixth sense*' in order to know what politicians want.

Advocacy and strategic skills are also necessary when dealing with the media, internet, or social media. Networking and setting up alliances with civil society and NGOs requires similar skills. However, some emphasize in this respect that health systems researchers should adjust their role depending on the case. Sometimes researchers need to be visible and pro-active while in other cases it might be enough to "*feed the NGOs"* or the media. However, the latter is easier said than done. In the words of a South-American interviewee, the media are after sensationalist news: "*The media tell me, if there's no blood, X, we don't show it.*" An interviewee from a BRIC country mentioned: "*There also some topics that policy makers are not yet aware of, but that should be promoted by health systems researchers. We call this the process of 'creating the demand' of the policy makers.*"

As already stated above, many of our interviewees (and especially decision makers) mentioned that health systems researchers should focus on the real problems in the country, and not engage in research just for the sake of research. They should also have an eye on the future; they should not just focus on current needs and gaps, but be "*prospective*" and also take into account the wider picture, and ways out.

Their specific educational background or scientific discipline does not matter too much; what matters is their education level (Master's or above), and whether they are prepared to learn on the job. "*You are not born a health system researcher, you become one over time, through education, training, field experience and research practice*." "*People should realize that research is not everybody's business."* External training in foreign institutes is considered as an asset, though. In some LICs, researchers state they have never really "*felt*" themselves to be real researchers; but as they were there in times of need and worked with international NGOs they were '*adopted as the country's health systems researchers'*.

Interviewees argued that, in comparison with decision makers, health systems researchers can and should focus more on the long term and on profound/institutional issues. Having said that, health systems researchers also need to be able to think from the perspective of policy makers, and take into account the constraints and political environment as well as know how policy processes tend to unfold in their country. They also need to be up-to-date and monitor the current health system situation closely. Some interviewees (mainly health systems researchers) stressed that they, rather than politicians, should know the priorities and needs of the country, as politicians often change - the latter work in a more volatile environment. Nevertheless, many respondents, researchers and policy makers alike, feel that key directions need to be set politically.

In a few cases, respondents mentioned a health system researcher needs to be daring and should not refrain from risk or taking on vested interests. More in general, respondents feel

that researchers need to be passionate about their job and research. Without a strong drive and at least some entrepreneurial attitude, health systems researchers are most likely to have little impact. They should also have stamina, and take a long term view. As a South-American health system researcher noted: "*If you are partying the whole weekend, then you won't make it. Your life has to be ruled by long term questions*."

Above all, a health system researcher needs to have scientific credibility. His or her reputation (and the track record of his/her institution) is a key asset. As scientific credibility seems to require political impartiality and academic independence, this sometimes conflicts with the need for a pro-active attitude.

This, however, is the ideal scenario. In practice, things can sometimes be very different for health systems researchers in LMICs.

In many LICs, researchers can feel very isolated, and under resourced. Some interviewees even acknowledged that this can sometimes lead to a problem of "low ethics" where researchers are compromised professionally, prepared to do "dodgy stuff" - like writing students' theses -, just to get by. Less obvious, but an issue nevertheless, is that many health systems researchers in LICs find their research priorities driven by consultancies that will provide the 'per diems' to survive financially. A Sub-Saharan African respondent put it like this: "*You find that people are not with the process itself, they attend the sessions, but make no serious contributions to the policies tabled for discussion, before they can pass to make a final document; they are not serious and they wait for diems and go back home.*"

In some countries, however, health systems researchers are well aware that the future lies in health systems strengthening, and that there are career opportunities, which might attract a certain kind of person. A health system researcher from a BRIC country pointed out: "*I don't know if I'm being cynical, but today I see most of the researchers are interested in how much money they will get, whether they will get a WHO job, etc.*"

2b) policy brokers and knowledge entrepreneurs

Policy brokers are not easily defined or situated. In this section, we examine how policy brokers themselves describe their skills and fill in their role.

Versatile "networkers" at the interface between health systems research and decision making can be found everywhere, in principle. However, the skills needed to be a successful HSR broker are often such that in many countries and settings, the number of HSR policy brokers is fairly limited. Policy brokers are perceived to exercise influence and power, and issues of gender, and at times, race, class and the control of resources play key roles. Policy brokers are perceived to more often be male, and in quite a few LICs, brokers were identified as expatriates working for influential international organizations.

There is no fixed model, acknowledge most brokers our country teams interviewed. The job is about '*seeing opportunities and seizing opportunities when they occur, and even making opportunities, in some cases'*. This can be done in a number of ways, and is context specific, so flexibility is key. "*You need to have more than one plan - in fact, it's best to have ten*

action plans and strategies ready", said an East-Asian knowledge broker. He also mentioned: "*In my opinion, there is no stupid policy maker,there are only stupid knowledge brokers who fail to understand what it takes to get evidence taken up*." It also requires patience: "*C'est un travail de patience, de longue haleine*."[5]

"*Knowledge brokers should think and act ahead of the policy makers*", was a claim often made. Policy brokers need to know the available research evidence and strategies in advance, so that, when the policy window opens, they have sufficient and appropriate evidence ready, as well as an appropriate strategy. If not, the opportunity might be lost. Strategic skills are thus a *condition sine qua non* for policy brokers. He or she will have to map the stakeholders (including the media) and then come up with the right strategy (also in terms of dissemination) to convince the ones that need to be on board while mitigating the impact of the others. An East-Asian knowledge broker even pointed to the strategic use of the internet in his country: "*There is a tool I'd like to highlight, that is the internet. In X, the advantages in information dissemination and communication of the internet have been increasing lately. Many incidents are now disclosed by the internet and attract political attention."*

The broker has to package his message according to the audience. And just like successful health systems researchers, policy brokers should be able to 'create the demand' of policy makers ("*un travail de sensibilisation*")[6]. They should thus not just offer evidence requested by policy makers, but also try to broaden their policy horizon. In some countries, it was mentioned that a successful policy broker has to see a policy through: from the agenda setting, all the way to implementation.

Obviously the background and connections of the broker matter. In one South-Asian country, for example, it was mentioned that "*it definitely helps if a policy broker is from an important caste or clan*". Idiosyncratic aspects also play an important role in many settings, including the personality of the broker/messenger sometimes. In other cases, and regrettably so, it was emphasized that a 'white face' was necessary - this points to the importance of racial aspects, or at least to the extra credibility and authority of expatriates working for an international institution). "*Sometimes I would be saying the same thing, but if I bring along my consultant, who is white, and tell him to say the same thing, he will be believed more than I would be*." In any case, the policy broker has to be well-connected. One South-East Asian respondent noted: "*a policy entrepreneur should have three characteristics: (1) one is a Guru who knows everything although he may not know things in great detail. (2) He should be well-connected; and (3) he should be a good salesman*." In this respect, the so called 'elevator test' says it all (South-East Asian interviewee): "*You need to convince the Minister and you cannot make an appointment with him in his office. So you go to see him in front of the elevator. You have a very short period to introduce yourself in front of him and in the elevator. If you can make the Minister get an interest in you and get him to invite you to his office, this is excellent. You pass this communication exam.*"

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[5] English translation of the French quote: "*It is a long-term work of patience and perseverance."*
[6] English translation of the French quote: "It is a matter of raising awareness."

Another respondent said: '*He should be like a GPS: even if the road is blocked, he should be able to convey the message*.' And a Sub-Saharan African interviewee: "*You have to sometimes bulldoze your way through. When there is passion to get things done, it happens*."

It goes without saying that, even more than was the case for health systems researchers, policy brokers develop these skills over time: "*It's a job you grow in*". And as was already mentioned, many successful brokers do some research themselves, or have done so in the past. Some were also decision makers in the past. In other words: professional mobility seems an asset, if you want to become a policy broker. Some even play a role as regional or even global knowledge brokers, advising institutions like UNDP, WHO, …; it is obvious that these are often more influential at the national level too.

Obviously, just like for health systems researchers, given the requirements to be a skilled broker, not every country has (successful) policy brokers, or the ones that play this role under-perform. An East-African interviewee mentioned for example: "*Policy brokers are useless; they are in lots of workshops but very little happens.*"

2c) Policy makers

Our interviewees acknowledged that politicians and decision makers work in a very different environment from researchers. The policy makers' world is a world of vested interests, values and ideologies, political bickering, power and budget struggles, political constraints, slogans and manifestos, civil society and media pressure. Advisers or even think tanks assist them. Unlike health systems researchers, their timeframe is usually short term and they often have to cope with emergencies or crisis situations that need urgent solutions. Some will be used as 'windows of opportunity', others might however damage the reputation of the politician or even destabilize the whole country. In some cases they might even have to react swiftly to "*faux problèmes ou des problèmes peu importants par rapport à d'autres, parce que parfois il y des abus dans la médiatisation de certains faux problèmes*"[7] (a Maghreb respondent).

In many LICs, the influence of donors also plays a role. In just one of the many LICs where this is the case: "*Policy makers have to work under the influence of various international organizations. Even the X who had fought for 15 years for universal health care have started now, after getting in the government, to talk about medical tourism, which is a completely capitalistic agenda*".

Politics is first and foremost about mobilizing and allocating resources; our interviewees stressed that LICs and MICs do not differ from developed countries in this respect. Electorates and researchers look at key decision makers for leadership. So political intuition and skill, networking skills, knowledge of the policy process, and of the constitution, laws, norms and regulations, are all very important for decision makers, both in the democracies and authoritarian regimes in our sample. Good politicians know when they have to take on

[7] English translation of the French quote: *"fake problems or problems of minor priority, as the media sometimes focus on fake or unimportant problems"*

vested interests and overcome opposition, as well as when they should probably avoid conflicts and open clashes. Also, they should have good management skills. And last but not least, very few politicians can do without at least some amount of grandstanding, whether they operate in democracies or authoritarian regimes. "*l'homme politique a besoin d'action d'éclat"*[8] (a Sub-Saharan African respondent). Another interviewee differentiated between "*la decision prise à chaud (qui vient de la détenteur de la légitimité politique, c'est le Président de la République), et les decisions à froid*"[9]. Only the latter are (sometimes) based on evidence. As for the former, "*Le Président peut dire : je veux qu'à partir de tel moment, les césariennes soient gratuites, les soins de personnes du 3ième age soit gratuits, les ARV soient gratuits…"*[10]

Many political settings are characterized by hybrid policies nowadays - politically driven, in some cases, in other cases evidence-based or at least evidence-informed. Interviewees from quite a few countries pointed to the fact that evidence played a role in some policies but that was definitely not the case in others. In some countries there is more of a 'culture of evidence based/informed policy making' than in others, and there will thus be more platforms and opportunities for communication between the two groups in the former group. Policy makers will have somewhat different characteristics and profiles, at least to some extent, in different political environments. Evidence seems to play a bigger role in MICs than in LICs (where often politically driven policies still dominate). This interviewee from a low-income South-East Asian country argues that: "*Policy making is like making sausages; it's messy, you don't want to know. In fact, it's amazing that any policy comes out of this process, given all the interests, stakeholders, …*" However, that is by no means a general rule. A BRIC interviewee acknowledged for example that policies in his country are still often "*ad hoc, populist and very individualized*. Lobbying plays a big role, as well as leadership - "*some health ministers are more pro-active than others*." Also in a South-East Asian country, this led to interesting quotes at times: " *A concrete example is Congressman …, a … boxer. He just sees it as: "Oh I don't see a hospital here, so my policy is to build a hospital. As he comes from a poor background and a setting where there was never a hospital. So he goes: "Now I have the power, I want a hospital. It may be totally irrational, as there is no study, evidence that we need a hospital*." And another one: "*That's a major factor in all policy-makers, whether it's the president or not. It's something like: 'Should I ban or support tobacco regulation? But if we have a president who smokes … So it's completely the bias or prejudice of the president.*'" But even in a regional 'role-model' country, an interviewee pointed out that "*in crisis situations, you need a central management acting with wisdom*" (in other words, implying that evidence might play less of a role in these cases). And in an East-Asian Middle-income country, it was noted: "*The higher the level of decision making, the more attention will be paid to evidence.*"

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[8] English translation of the French quote: "*The politician needs high profile action*".

[9] English translation of the French quote: "*hot decision (taken by the holder of the political legitimacy, i.e. the president of the republic) and cold decisions*"

[10] English translation of the French quote: "*The president may want to say: from now onwards I want C-sections to be free, free care for people of the 3rd age, ART to be free…".*

Sometimes the background and characteristics of policy makers also plays to the advantage of some health concerns and policies. An interviewee from a Northern African country noted for example: "*The fact that a woman was in charge in X considerably advanced women & child health*".

It does not only have to do with the culture of evidence in a country, or whether policy makers got training in HSR; often the political sensitivity of health system research also matters. Many policy makers, risk averse ones as well as mavericks, will be more keen to take up relatively technical suggestions than evidence that seems to require comprehensive reform of the public sector. Policy makers will also keep in mind the sustainability of policies, when considering evidence - more than health systems researchers who are keen to see "their" evidence influence policy. "*Maybe the institutions are still very weak.*"

Unlike health systems researchers, top politicians will also have to keep in mind other sectors and balance the issues and interests. So although their time horizon is perhaps more short-term, their environment is also typically more complex than the world of many health systems researchers, as a decision in the health sector might for example impact other sectors. One interviewee also pointed out policy makers need to be sufficiently critical of evidence - and not just accept it like that. They need to ask questions.

As for the information health decision makers want, many interviewees minced no words: "*Ultimately, policy makers want to know whether it works and what it costs. That's the bottom line.*" They also want to know it in straightforward language, without too much jargon. They thus "*expect technical people to inform them in a palatable way.*" Unfortunately (for them), many health systems researchers do tend to like more conceptual discussions, as both decision maker and researcher interviewees acknowledged.

Just like health systems researchers, some decision makers are keenly aware of current global health trends and buzzwords; they often also look at regional "role models" (or, like in the case of India, neighbouring states which seem to have relatively well-performing health systems), and might even pay study visits. We will come back later on the issue 'domestic versus international evidence'.

Finally, most of our interviewees also seem to agree that the political leaders and decision makers need to set the policy direction, as they are the ones that are accountable. Only once the direction is clear, and evidence is needed to give content to the policy, evidence should play a role.

3. HSR capacity nation-wide

The previously mentioned lack of a coherent HSR concept and the fact that our questionnaires did not contain specific questions on various pre-defined 'dimensions' of HSR capacity - given the qualitative research design - results in difficulties mapping HSR capacity. While the interviewees often mention that there is an increased interest for HSR in their country, HSR capacity itself remains rather limited in most countries because of major shortages in funds

and human resources on the one hand and scattered and fragmented HSR expertise on the other hand.

In most sampled countries, there is a consensus that HSR capacity needs to be boosted by more domestic as well as more international funding and that a more coherent resources approach between both is required. The following quote from a South-American interviewee shows that HSR capacity in his country can be "*counted on the fingers of one hand*". Worse, even the limited capacity available is under threat as competition with the international funders causes brain drain: "*Just to provide a rough idea about this situation: in X you can identify not more than 5 adequately trained health economists, less than 3 well trained pharmacologists, less than 5 social medicine experts…. The ones who decided to pursue their activities in this field, are more often than not captured by international organizations to work abroad, or if they remain in the country they are captured by NGOs, private actors, industries and hence do not contribute to the state HSR*".

Often researchers and policy brokers stress the following need: "*To reinforce the NHS we need to break the vicious circle that the NHS can operate just thanks to donor grants*", as quoted by a South-American and South-East Asian policy broker. "*Then, it is required that the state allocates resources to increase the NHS and the HSR capacity, so that researchers are in a position to provide scientific evidence*". These quotes highlight the need for continuity expressed by many.

We organize some of the findings below along the lines of institutional and individual capacity, although interviewees did not always make this distinction explicitly. System-wide capacity or capacity in terms of an 'enabling environment' was even less mentioned.

3a) Institutional capacity & capacity building

Often the weak institutional capacity and the focus on biomedical and clinical training of human resources for health are mentioned as root causes of the limited critical mass in HSR. This is the case in some Western African countries, for example : "*c'est d'abord la rareté des institutions nationales de recherche, l'absence de mécanismes facilitateurs (une structure fédératrice) ; c'est aussi un problème de compétence dû à un manque de formation dévolue à la recherche. Tout cela concoure à une difficile éclosion d'une culture de recherche dans le pays*"[11].

Instead of quick wins most interviewees express the need for long-term HSR bodies, structured organisations where HSR capacity is set up, research is done and best practices are collected. That platform could be situated inside a university, a research unit within the Ministry of Health, or offered independently by "*un pool d'experts qui vont appuyer ce*

[11] English translation of the French quote: *"it is primarily the scarcity of national research institutions, the absence of facilitating mechanisms (an umbrella structure), it is also a problem of jurisdiction due to a lack of training devoted to research. All this contributes to a difficult establishment of a research culture in the country"*

département pour que maintenant la recherche puisse être systematisée"[12], according to a policy-maker in Central Africa.

3b) Individual capacity & capacity building

As for individual HSR skills, most interviewees agree that HSR education is very limited and a broader HSR curriculum is required (including training of social skills and policy note writing, for example) to foster interaction between the health systems researchers, policy brokers and policy makers in order " *to make your research more palatable to the targeted audience*". Researchers' involvement in networks and platforms (domestic, regional and international) and the boards of international organisations is seen as crucial for good HSR development. Policy uptake could be seen as a proxy.

Or said with the words of an Eastern African researcher:

"*Capacity building is not robust. Some researchers support trainings to support young researchers but they are not well developed. Most of them have masters with no clear cut progress to doing research or providing grants for research. Young people should learn that research is a painful process, they should understand research. Capacity building is key. They should try to understand what health systems research is and the methodologies that are applicable. They should know that understanding research methodology is easy, understanding health systems research is hard, while writing papers to be accepted by per reviewed journals is hardest. They need institutional support, HSR need understanding political, economic and social sciences that are not taught in many medical/public health schools."*

Capacity building may be enhanced by involvement in international research consortia and collaboration and partnerships with foreign universities. Some reckon this international cooperation "*offers multiple benefits: learning opportunities, including from experiences in other countries; and on top of that those networks create good communication opportunities towards decision makers*". Others find them too donor- and money-driven, full of empty talk but lacking action and concrete results. There is "*too much focus on superficial buzz words to keep the donors' priorities high on the country list*", as expressed by an Eastern African researcher.

Individual HSR training includes diligent research work on postdoctoral level for some, whereas for others it has more to do with pragmatism and "grabbing opportunities". To improve HSR capacity, and bridge the gap between what is taught and the reality in the field, the need for field knowledge is often stressed, if only to avoid empty rhetoric.

In a number of cases, interviewees also referred to the (lack of) capacity of decision makers to use evidence. In some cases, training courses were suggested to make up for this.

[12] English translation of the French quote: *"a pool of experts who will support that department so that research can be systematized".*

In brief HSR capacity building is perceived as a general need in LMICs: it involves the need to support organizational research structures and knowledge translation platforms, updated HSR curricula with a specific focus on individual skills development including negotiation and social skills, writing and presentation skills, all within a long-term view and with an interdisciplinary focus. The capacity of decision makers to use HSR evidence also needs to be boosted, many acknowledge. Organizational and individual capacity building both need to happen in a conducive environment in which the state has an important governance and leadership role to play.

4. HSR done nation-wide

Due to the fact that HSR is still a relatively new and not well-defined field and that only a limited number of interviews were done in all countries, the information gathered in the interviews is of a rather fragmentary nature. Also, interviewees from the same country did not always concur in their assessment of the amount and types of HSR done in their country. In some countries, this might be partly because of the numerous settings where HSR can happen - Ministry of Health, international organizations, research institutes and academe, NGOs, think tanks, independent national and international consultants, etcetera. Our interviewees, although mostly senior and relatively well-informed, do not always have the overview of what happens in terms of HSR, nation-wide. As a consequence, quite some interviewees mention the need for coordination, as expressed in the quote of an East African policy broker: "*Bluntly, we could even say that the spread of HSR over such a multitude of organizations hampers the work on HSR rather than enhancing it because of lack of coordination.*"

Hence, although most interviewees had a general idea about HSR done in their country, and were eager to talk about the overall situation, it was difficult to interpret their assessments, let alone rank the extent of HSR nation-wide from "inexistent" to "well developed". Benchmarking is thus not possible, even more so because researchers and policy makers often have a different opinion of the HSR development stage within the same country. This was the case in some Southern African countries for example. However in almost all countries, respondents believe that HSR is gaining ground and that there will be more focus on HSR in the very near future. That even applies in a number of countries where so far HSR is almost inexistent, as expressed by an Eastern African researcher: "*Very little research is dedicated to health systems. The capacity to conduct HSR still remains limited. This is the result of limited finances and personnel with the skills to conduct HSR. Plans are underway to develop a centre for HSR and we envisage priorities to mentor young people in HSR through internships.*"

Very little accurate or specific information could be obtained on the proportion of government budget spent on HSR. Concrete figures were only given in some countries and varied from less than 5% of the health research budget spent on HSR in a Middle African country to 20% in a South-East Asian country. In general, estimations on HSR as proportion of the total health research budget remained rather vague, but it is obvious that budget lines for HSR are considered insufficient or worse in most countries. This has obvious consequences in many

settings. The following blunt statement by an African researcher reveals the gaps and the isolation in which some researchers still work : "*bon ça fait un moment maintenant que je ne suis plus beaucoup ce que les autres font puisque je m'intéresse à ce que moi-même je fais ou au projet auquel je suis associé"*[13]. Most health systems researchers blame the state and the politicians for lack of leadership and governance in HSR but also researchers are accused of not always assisting in providing evidence to put HSR findings into practice.

Ideally countries decide on their own HSR but in most LICs where HSR remains mainly funded by international donors, if it occurs, other priorities can prevail. A long term view on sustainable HSR is often lacking in these countries, as eloquently expressed by an Asian policy broker: "*When the donors' money comes, we feel that nothing has ever existed and we want to start from scratch. We don't even move to the second step when the project ends and again we are on square one because the gains are lost. They are not sustainable and they can't be continued."* Equally, in some African countries a lack of domestic ownership leads to a research agenda that is not in line with a country's real needs e.g. the proportionally very high budgets for HIV related research compared to other domains in some Southern African countries. Also, some Asian interviewees stress that HSR developed rather quickly in the cities but remains undervalued in rural areas. The situation is different in a few BRICS. Some of these tripled their funding for HSR as compared to the nineties, sometimes due to a health shock event, in other cases due to a political transition, two important drivers of political commitment and action in HSR.

Current HSR focuses on a range of topics, such as the WHO building blocks (with health financing and human resources as clear favourites), diseases and vertical programmes, the Millennium Development Goals, Universal Health Coverage, Health Systems Strengthening, Non-Communicable Diseases, … Some health systems research types and approaches are more common, and others less (decision makers often complain for example that more operational research should be done), but it is difficult to map the nation-wide situation in this respect. The HSR done is mostly but not always driven by money. A few countries mention historical reasons for research choices regarding disease-specific subjects or HSR. Some South-American countries mention the fundamental influence of the private sector to limit HSR to health financing and universal coverage.

Finally, there is a clear need for more alignment and coherence between the international and the local HSR agenda. A clear planning on HSR investment and action on short, mid and long term is required to avoid that the quick wins of the short term harm the objectives of the long run.

[13] English translation of the French quote: *"well, it's been a while now that I don't follow too much what the others do as I'm mainly interested in what I do myself and in the projects I'm associated with".*

5. Knowledge translation

Policy uptake of health systems research (or lack of it) was described in all interviews, be it with health systems researchers, policy brokers and decision makers. All interviewees had at least some idea of current practice in their country, as well as of the ideal (or at least a much better) scenario - the ideal scenario might be different though for health systems researchers than for decision makers. Indeed, many decision makers indicated that they welcome health systems research, but whether they were serious about this claim will differ from person to person.

Below we list some of the facilitating factors and barriers to policy uptake of health systems research in LICs and MICs, as described by interviewees (researchers, policy brokers and decision makers). One could also call them 'drivers' of policy uptake - more often than not, barriers will be the reverse of the triggers and facilitating factors. The *ideal scenario* for knowledge translation - at least for health systems researchers, who want their research to have an impact on policy - will be a situation in which the most frequently mentioned facilitating factors are in place, and as few as possible barriers. But then again, optimal conditions for KT will also depend on the setting and on the content of the research and policy (see Discussion). The more common (i.e. most commonly mentioned) facilitators and barriers are described at the end of each section.

5a) Facilitators

Many factors can facilitate the policy uptake of HSR evidence in countries. Many of these have to do with bridging the gap between health systems researchers and decision makers, to avoid that they operate as two distinct communities.

- **Dissemination** obviously matters. Researchers need to package their research so that policy makers can get easy access to their key findings, if and when they need evidence. Synthesized information (for example through systematic reviews, policy briefs and newsletters), timely information, user-friendly evidence (refraining from jargon and methodology), repeated communication, if necessary translated (for evidence published in international journals), targeted communication (focus communication on key decision makers, as well as on the bureaucratic staff just below them, as there is less turnover there), … Researchers need to adjust their dissemination strategy according to the setting. For example, in some cases, it might be necessary to also focus on lower government levels. In many cases, researchers will try to engage the research unit in the MoH (if there is one). For successful dissemination, it also helps if researchers or brokers try to involve policy makers from the beginning (already at the design stage of a project). In other words, the dissemination strategy should start very early in the process (see below). Indirectly, with an eye on the medium and long term, it also helps if health systems researchers can increase the visibility and credibility of HSR in the eyes of the broader public (through media and internet, for example) and of medical students and professors (through more high-impact publications, or training in health systems thinking), so that a bigger pool of people is aware of the potential added value and holistic lens of HSR. Finally, dissemination should always be contextualized, and the choice of language for publication clearly determines its outcome

for this respondent from a Sub-Saharan country: "*Si vous voulez vous rendre utile à vos pairs, publiez en français. Si vous voulez être reconnu par vos pairs, publiez en anglais*."[14]

- **Structured and ongoing communication channels, platforms/fora and networks between researchers and policy makers:** these can be formal/institutionalized or informal (personal relations). "*You need to have the ears of the ones that matte*r." (respondent from a Sub-Saharan country) In some countries, research institutes are part and parcel of the government; in other countries well-resourced research units with sufficient capacity inside the MoH play a pivotal role. Interaction between the research community and the decision makers should be continuous, coordinated, as well as involving decision makers from the start of a project. If they are engaged from the beginning, this can broaden the decision makers' policy horizon (and they will also feel more committed by the evidence that comes out of the project, even if they do not particularly like the findings). However, researchers and policy makers should not be too close, as this might jeopardize the independence of researchers. Donors (like WHO) can actively facilitate platforms like these – in some countries they do so (or have done so in the past, some interviewees mentioned). Ongoing communication is facilitated in many cases if people know the perspective and role of the other side, for example through professional mobility, with researchers becoming policy brokers or even decision makers, and vice versa, decision makers conducting research.
- **Research that is in line with the needs, priorities and requests of politicians, and/or in line with the needs of the country** is more easily taken up. This can be research commissioned by the MoH, so research for which there is a clear policy demand, for example, or research that is conceived based on a national research agenda. Alignment between research and health policy makers' needs is important, although obviously researchers want to maintain their academic independence (see above). A domestic research agenda, ideally one that is decided after a large multi-stakeholder consultation, is seen as essential though, to improve systematic policy uptake of health systems research. Note however that research 'in line with the needs and requests of politicians', and research 'in line with the real needs of the country' are not necessarily the same. All the more reason for health systems researchers to fight for their academic independence, even if they aim for policy-relevant research.
- **Solid, good quality research & a good track record** are seen as indispensable. Scientific publications can boost the academic reputation of researchers and research institutions (and thus boost their status among peers but also in the eyes of decision makers). If researchers or their institution have a good track record, in terms of delivering to policy makers (so that policy makers know they have the skills, critical mass and manpower to deliver results), policy makers will more easily request their evidence.
- **Political commitment, capacity and a culture of using HSR evidence among policy makers**: this needs not much explanation. Political transition periods, health crises and "media shock events" can all present 'windows of opportunity' to increase political commitment to use HSR evidence, at least for some time. Some of our interviewees

[14] English translation of the French quote: *"If you want to make yourself useful to your peers, publish in French. If you want to be recognized by your peers, publish in English."*

expressed this, for example for countries coming out of civil war or for brand new democracies (who might want to invest more in the social sector). However, it is also possible to boost such a culture of evidence in less turbulent times, for example by providing a research assessment unit in MoH with enough resources; through training workshops and policy seminars ("*We should build the capacity of all policy makers to become researcher*s"); by showing decision makers what HSR evidence can bring to the policy process (for example, through showcasing successful pilots, or showing the added value of models that work) - it surely helps if researchers show this added value in the language that decision makers prefer (does it work, and what does it cost?). In a BRIC country, for example, an interviewee gave the example of a 'champion mayor': "*So we would have a champion mayor. Now, he would attend a mayor's forum and speak about it and its benefits. Or for example, I would have a governor who has integrated his health system. So he would go to a governor's forum and share. With real cost-effectiveness, and efficiency and equity shown. And this governor has already understood all those concepts of effectiveness and efficiency and equity. Enough to speak of it with a command. And that becomes effective research translation".* **A more transparent policy process** can also boost this culture of using evidence, for example if the constitution or legislation requires a transparent policy process (in which evidence needs to play a role). Finally, policy makers also need good management skills (so that they can put evidence into use, if they feel it might bring something extra).

- **Funding**: Political commitment is displayed obviously in sufficient domestic funding for HSR (and resourcing a research unit inside MoH, or resourcing advisory research institutes to the government). In addition, if policy makers show through financing that they deem the field valuable, then this will also raise the attractiveness of HSR as a field in the scientific community. Interviewees mentioned that donors and development partners could and should also dedicate a part of their funding to HSR, and to GRIP (getting research into policy) to show they value knowledge translation too. In a way, given the recent wave of health systems research, and the increasing HSS discourse, this is already happening. In settings where donors and development agencies have a major influence on health policies, this will clearly benefit policy uptake, argued some interviewees. More in general, the international environment is increasingly conducive to HSR uptake. It seems no coincidence that recently in quite a few LICs mechanisms and platforms are being considered or have just been set up to facilitate HSR interaction and uptake.
- **Some HSR content/evidence is more easily taken up than other content, and the policy stage could matter too**: if evidence is not politically sensitive, but rather technical, or directly useful to policy makers, then policy uptake is easier. For example, tracking of health indicators, through comparative datasets, league tables, benchmarks, … ; also guidelines at the practical level (like HSR done by health facility managers) and operational research are often easily translated into policy. If, on the other hand, research evidence is seen as politically sensitive, or requiring comprehensive civil service reform, then it is much harder in most settings. A South-East Asian interviewee mentioned: "*Operational and technical policy is easier to influence than "health systems" policy*." A West-African

respondent said, evidence did not really play a role for the key political decisions ("*les decisions prises à chau*d"[15]) but could influence implementing policies ("*les decisions à f*roid"[16]). A South-East Asian policy broker put it in similar terms: "*At the phase of setting the policy directions, we do not need evidence. Nonetheless, at the process of drafting policy content, we do need evidence*."

- **Strategic, networking and advocacy skills (of researchers and/or brokers):** if HSR evidence is (potentially) politically sensitive, it becomes all the more important to manoeuvre skillfully. (We do not distinguish between 'filtering' and 'amplifying' (WHO 2007b) of research evidence here, as this distinction was not made by interviewees, by and large.) Researchers and brokers who know the policy and legislative process, relevant stakeholders, know how to play the game of the media, social media and internet, set up alliances with civil society groups, and feel intuitive when a policy window opens, have a clear advantage. (see before: they are the ones that know how to 'dance with policy makers', or have a so called 'sixth sense'). In a South-East Asian country, for instance, we came across a broker who went about his advocacy/communication towards stakeholders in a very systematic way, through five stages. Researchers and brokers who are strategic in terms of international global health trends and buzzwords (like MDGs, UHC, …) and make an effort to package and label their research in this way, also stand a better chance. Many decision makers are keenly aware of MDG benchmarks, and what the MDG gaps are in their country. For efficient networking and advocacy, it also matters who the messenger is (in terms of background, social class, and personality). Skillful researchers and brokers keep their assets and relative weaknesses in mind when approaching decision makers.
- **Domestic evidence versus international best practices**: the picture is somewhat blurred, here. Both can be preferred, depending on the circumstances and setting, as well as the profile/education level/governance level of decision makers. Sometimes international guidelines and best practices are more easily taken up, due to their perceived higher scientific status and credibility. See an interviewee from a West-African country for example: "*You know better than I do that when information comes from WHO, the World Bank, everybody is running at them. Unfortunately our system is tuned to such statements. WHO says this and we are running*." Sometimes regional schemes or interventions are taken up, for example through regional networks, or visits from MoH staff or decision makers to neighbouring countries (or states, like in India) or regional 'role models'. Decision makers often pay peculiar attention to what happens in neighbouring states or countries. In one BRIC country, respondents mentioned that international evidence seems to play a bigger role at higher levels of decision making, whereas local policy makers often prefer domestic evidence; this has not only to do with the (higher) education level of top decision makers, but probably also with language skills, the interviewee pondered. However, in many countries interviewees expressed that domestic evidence is more easily taken up, as it is seen as more in sync with the local context, the cultural and social environment, local traditions, … This is only the case though if the local evidence is seen as

[15] Hot decisions
[16] Cold decisions

of sufficient quality. Unfortunately, often quality of domestic research is seen as deficient, and international evidence is then seen as the only available quality evidence. However, sometimes international evidence can also serve as a catalyst for take-up of domestic evidence. If best practices are adopted, they still need local adaptation, is the general feeling. A Southern African interviewee put it like this: "*We don't just swallow*. *We normally broadly take up what is suggested by some of these international organizations but in terms of putting it to use locally, we prefer that we do it on our own, so we implement taking into perspective the local condition*s. *We look at ourselves in terms of our capacity to implement a good practice. Perhaps we say, with the available funds this is something which we will do in a phased approach, maybe over 2 or 3 years*". A South-Asian interviewee mentioned: "*We can't just say these are the global commitments, these are the priorities. We may have different issues*." In a South-East Asian country, a policy maker even said: "*We are quite adept at smelling when research on a best practice agenda is pushed by a donor(s) that is (are) already implementing this best practice*." Sometimes though, especially in countries with huge financial leverage of donors and development agencies, MoH staff mention that they are being 'overruled' by donors, who might push their evidence/agenda, even if they would prefer a domestic research agenda and clear ownership. In the words of an East-African respondent: "*What research influences policy makers in this country? International research. Research presented with large cheques for implementation is easily adopted. Local research is sometimes fed into annual operation plans.*"

Facilitating factors that were mentioned most by interviewees were: professional dissemination, research in line with demands of decision makers and the needs of the country, structural interaction opportunities (networks & platforms), and political commitment and an evidence based culture. The three categories of respondents (researchers, brokers and decision makers) mentioned these factors more or less to the same extent. They also often referred to these factors (or at least to some of them) when they described the - in their view - "ideal KT scenario" in their country.

In addition, policy brokers mentioned 'content' and 'skillful strategy & advocacy' more than the other categories. Finally, policy makers also emphasized involving field workers in operational research (which shows their preference for 'instantly usable' research).

5b) Barriers

Many barriers, if not most, present the 'opposite' situation from facilitating factors, and can thus in principle be derived from the previous section. However, the ones you find below are all based on accounts from respondents (talking about the situation in their respective country), so we opted for listing them here in detail.

- **Resource issu**es: if financial resources are lacking for the MoH (and especially for the research assessment unit in it, so that capacity is not sufficient to assess, manage and steer health systems research), or if the fiscal space is just not there to implement HSR evidence, or if there is a lack of human resources, … all these present obvious barriers to research uptake and implementation. Obviously, in many LICs and especially in fragile states, HSR and even research in general are not a national priority.
- **Political transition & turmoil and health crises and "media shock events"**: these can present 'windows of opportunity', as we mentioned above, but our interviewees also pointed to the reverse. Political instability (involving frequent changes of government) can jeopardize the use of HSR evidence. As for the impact of crises (health or other crises), see for example a South-East Asian respondent: "*When there is a crisis, you need central management acting swiftly with wisdom.*" (read: there might not be enough time to take into account research evidence). Political and socio-economic shocks can be seized upon by certain interests, who use 'their' evidence to back their case. And obviously, there are also media-inspired 'crises' where the focus lies sometimes on the wrong (i.e. relatively unimportant) issues. A Northern African respondent contended: "*Il faut souligner que parfois, il y a des abus dans la médiatisation de certains faux problèmes ou des problèmes peu important par rapport à d'autres et qui peut influencer la decision politique*"[17]. Media can thus facilitate HSR evidence take up (if they focus on real issues, and lead to big media pressure on politicians to do something about it) but also jeopardize it (if they elevate unimportant issues).
- **Politics, interests & ideology, power & budget struggles**: these obviously play a major role, in all countries, low-income as well as middle- and high-income countries. They might come in the form of ad hoc and populist policies, slogans and manifestos, or in the form of strong opposition from vested interests against certain policies (inspired by HSR). We already mentioned above that HSR evidence that seems to require broad civil service reform tends to be politically (and bureaucratically) sensitive; politics and bureaucratic resistance play a larger role for these than in the case of more technical evidence and guidelines. Also, politicians and groups might not be very interested in evidence, unless if it suits their own agenda, especially in times of polarization. A Sub-Saharan African respondent dwelled on a related problem, distortion by decision makers of research, either purposefully or not on purpose: "*In some cases it is the policy makers putting pressure on researchers when they want evidence to support their presentations, and as a result, there is room for misinterpretation. You will hear a policy maker asking a researcher "just send me a few slides… I'm going to a meeting at …; just five slides are enough… but how can research which has been going on for two years be summarized in five slides? Moreover it is just the preliminary results… and then by a policy maker, who isn't really aware of the details of the study*!"
- **Lack of political commitment and of an evidence-informed policy culture**: this can be due to a lack of capacity among policy makers, but political commitment and a culture of

[17] English translation of the French quote: "*Note that sometimes there are abuses in the publication of certain fake problems or minor problems compared to others, which can influence the political decision making".*

evidence is also something that has to grow over time. A certain amount of stability seems a precondition for political commitment to HSR to develop, and even more for a national research agenda and ownership.

- **Donor agenda and lack of interest among international researchers**: as already mentioned, and as stated by a Sub-Saharan respondent, "*If a country cannot finance its own health system, it risks that health policy is being hijacked by donors, who can sometimes produce very scant evidence to back their agenda, and sideline perhaps relevant other research.*" Another Sub-Saharan respondent claimed: "*Donors also have their own interests to accomplish and international researchers too, for some just want publications and ascent for their career; informing local policy makers and changing policies for the better is not their priority. This attitude has to change, although it's difficult with donor dependent research.*"
- **Bureaucratic resistance to change (-) and concern for institutional stability (+)**: civil servants might be opposed to certain reforms that seem necessary from an HSR point of view. Institutions can be quite inflexible, as is well known. However, there is also a more justified tension between innovative HSR evidence on the one hand, and decision-makers' concern for institutional sustainability in a country. See a respondent on the situation in a low-income country: "*There is also an inherent tension in many countries between, on the one hand, major portions of the sector that are constantly reinventing themselves, responding to new evidence, while on the other hand, in the centre, you want a stable, sustainable government system that will survive once the donors are gone. Evidence for policy is necessary, yes, but policies are necessary that are institutionally sustainable*."
- **A lack of structured communication and interaction between researchers and decision makers**: both formal (institutional) platforms and networks and informal networking opportunities and contacts are lacking. It is also difficult, if there is no clear focal point for health systems researchers in the MoH, so that researchers have the feeling that they have to convey their message to many stakeholders and various levels, without knowing clearly which ones pull the levers or have the clout to get evidence taken up in policy.
- **Evidence not adjusted to the context or not in line with the needs/requests/expectations of decision makers and needs of the country**: research that is not timely, or insufficiently packaged (poor dissemination) to suit the needs of policy makers is usually ignored. Sometimes health systems researchers focus their research on international funding opportunities, rather than the real needs of the country. The chance of being taken up then by decision makers is rather low, unlike for research that is commissioned by them. Often policy makers also prefer hands-on (operational) evidence instead of the conceptual discussions which many health systems researchers seem to be fond of. Sometimes researchers just do not understand the political environment and constraints under which decision makers have to operate (a South-Asian interviewee). And many researchers just seem to lack the dissemination and networking skills to approach decision makers successfully. Again the South-Asian respondent: "*This is where I blame researchers: they just want to impress the people who are not technical with jargon. You need to understand your target audience. It is the responsibility of technical people to inform decision makers in a palatable fashion*."

- **Lack of domestic quality research and/or of research capacity**: this can be due to a lack of training programs in HSR, lack of funding, few career options, …. Obviously, if research is seen as deficient or of low-quality, chances are that decision makers will base their decisions on other information sources. Sometimes there is also a lack of reliable (baseline) data, so that decision makers have no reference point to prioritize (as one South-American interviewee mentioned, for example).
- **Background of the messenger and idiosyncratic issues**: as we already mentioned, the messenger (activist researcher, or a broker) matters sometimes – class, social background, even race, unfortunately. See the interview with the broker of a South-East Asian country: "*Sometimes I would be saying the same thing, but if I bring along my consultant, who is white and tell him to say the same thing, he will be believed more than I would be".* But also more innocent features of the messenger can matter (like his/her personality, whether a broker fell out with a decision maker in the past,…).
- **Other barriers**: a lack of strategic skills, on the part of researchers, for example when it comes to engaging/capitalizing on the media or on civil society groups: "*Quand on regarde aujourd'hui ces groups de pression, les medias, … nous, du secteur de la santé on les utilise mal*.[18]"

  Common barriers (i.e. often mentioned by the interviewees) are 'lack of political commitment & evidence based culture', 'political/ideological factors', and 'lack of structured interaction opportunities & research in line with needs of the country'. It will come as no surprise that policy makers mention 'lack of political commitment & evidence based culture' less than policy brokers and health systems researchers, as well as the fact that politics & ideology often play a big role.

6. Suggestions for young health systems researchers

All interviews ended with the request to the interviewee to give some recommendations for young health systems researchers. Most interviewees took a coaching and mentoring role by sharing their personal experiences. The interviewers commented that it was often a break with the more formal, sometimes sensitive or loaded previous part of the interview and it was a good opportunity to wrap up the interview and get feedback on how the interviewee experienced the interview.

The recommendations given can be divided in the following subcategories:

- **Background and education needed:** Quite some interviewees agree that a good solid basic (often defined as medical) education is necessary (MD, MPH, PhD…). A Western African researcher argued for example: "*On ne naît pas chercheur, on s'investit puis on*

[18] English translation of the French quote: "*When today you look at the pressure groups, the media…we, in the health sector, have used them poorly."*

fait un créneau et on continue dedans[19]*".* Also, education needs to go beyond the current disciplines as expressed by an Eastern African policy adviser: *"The young generation should be in a continuous mode of learning and develop interests in doing research. For instance medical students shouldn't just focus on treating patients but also need to learn how to do research, how to disseminate the findings and mix with other fields".* This statement from another interviewee can be interpreted similarly: *"… understanding HSR requires to be familiar with political, economic and social sciences that are not taught in many medical schools."* Action research and knowledge of the field are also considered essential elements of young health systems researchers' toolboxes. However, many interviewees argued that the type of education needed in order to be considered a health systems researcher is very country-specific. This is expressed by an Eastern African researcher: *"People underestimate what it takes to be a researcher. Doing a PhD to some people is being a researcher. However, in the north, PhD is an entry level to research. It might take one 9-10 years to be a researcher".*

- **Resources and support needed**: Young researchers should not work in a void. Most interviewees stress the need to *"engage in different associations"* An Eastern African and South-East Asian policy adviser warn young researchers *"not to want to run before they can crawl. They need to step down and seek for mentorship from seniors before they can reach their aspirations. Young researchers should be prepared to do the donkey work before reaching the top most levels of their careers, a kind of grooming that is vital".* Besides networks and mentoring, institutional support (in terms of infrastructure, internet access, libraries, access to international journals, …) is also deemed necessary. Quite a few senior interviewees also stress the importance of setting up multidisciplinary health systems research teams with complementary people who can assist each other.
- **Character traits young health systems researchers need:** A health systems researcher should be a *"go-getter"*, an energetic entrepreneur with a strong drive and passion to grab opportunities when they present themselves. A sense of curiosity, critical thinking and eagerness to keep learning are inevitable character traits. A South-American researcher argues that persistence and discipline are required: *"If you are only interested in partying, then you should probably aim for another career."* An Eastern African policy adviser describes it as follows: *"Young people should learn that research is a painful process, they should understand research. Understanding research methodology is easy, understanding health systems research is hard and complex, while writing papers to be accepted by peer reviewed journals is probably even harder."* On the one hand a young health systems researcher needs to be flexible due to the complexity and ever-changing nature of HSR and the volatility of policy-makers. On the other hand a South Asian policy adviser highlights that *"research should be very simple and made palpable to the policy makers and they should not shy away from research even if it has to be with a humble start".* A good health systems researcher is passionate about research *"il faut y croire"*[20]

[19] English translation of the French quote: "*One is not born researcher, you invest yourself in it, then you create a niche and you go in depth".*

[20] English translation of the French quote: "*One needs to believe in it".*

and not greedy or interested in making a lot of money, a thought confirmed by some Western African researchers: *"Si je me plais dans cette activité, ce ne pas parce que je reçois de l'argent, vous savez tout aussi bien que moi que la recherché ne nourrit pas son homme, mais c'est de voir que les résultats de la recherche sont utilisés"*[21]. Young researchers need to be team players and activists who play the media well. Team spirit is often mentioned as key.

- **Skills required for being a good health systems researcher**: an entire skills palette for health systems researchers is touched upon: it ranges from analytical skills and multidisciplinary skills to social and scientific writing skills. The need for good networking and communication skills pops up frequently, especially among the policy brokers as was shown in a previous South-East Asian example by means of the elevator test. *"Some people conduct research as part of their responsibility, maybe because they are doing it to make a living, others for another reason but not for the sake of improving policy making. They don't really care if the policy makers are informed of the findings are not. That attitude needs to change".* Young researchers need to find fora to disseminate their findings: *"We need to invite young people to scientific conferences to present their results, to listen and be listened to".* Young researchers need to gather knowledge from the literature but they should also learn about international best practices. They need *"commercial flair"* and *"well timed interaction with decision makers".*
- **Focus on good quality research:** To be credible, good quality research is a main requirement. Without it, health systems researchers will lack scientific authority and be ineffective. As already mentioned above, good quality research is often seen as *"une recherche utilitaire…qui ne soit pas dissociée de l'environnement réel, social, économique, politique…"*[22].

From this extensive list of educational requirements and recommended skills and qualities, one might get the impression that the interviewees think a young health systems researcher should be some kind of 'homo universalis'. However, many acknowledge that not every aspiring health systems researcher can be a versatile Leonardo Da Vinci. As a consequence, they often stress the importance of setting up multidisciplinary and complementary teams, with a good mix of junior researchers and more experienced mentors. In addition, they say it typically takes quite some time before a young researcher can call him or herself a proper health systems researcher.

[21] English translation of the French quote: "*If I'm taking pleasure in this activity, it's not for the money you know as well as I do that research doesn't feed you, but it's seeing that the research results are being used".*
[22] English translation of the French quote: *"useful research…that is not disassociated from the real, social, economic, political environment".*

7. Some general patterns and trends

This mapping exercise utilizes the specialist knowledge of senior, experienced HSR informants to provide an overall conclusion in terms of HSR capacity nation-wide, HSR done nation-wide and policy uptake of HSR, recognizing that the subjective nature of this exercise will provide variance in its estimates (see Annex C). Despite this, we are confident that the aggregate information provides a reasonable overview for which general and regional patterns and trends may be identified. These conclusions are offered as hypotheses based on the available data, to be confirmed by future research. We refrain from making claims about certain regions for which we only have few countries in the sample.

HSR capacity

There is an apparent relationship between income level of a country and HSR capacity, with LICs on average having lower HSR capacity than MICs. However, and this is perhaps surprisingly, even among upper-middle income countries, there are still countries with very limited HSR capacity.

In terms of regions, the pattern is not very clear, partly due to the fact that some regions are not well represented in our sample. In most African countries, HSR capacity remains weak. There are a few exceptions (with Ghana perhaps being the most obvious one). BRICS countries in our sample had better capacity, though India seems to lag somewhat behind China and South-Africa in this respect.

As for HSR training programs, these are very limited (or even non-existent) in most countries in the sample, LICs and MICs alike, with the exception of countries like the Philippines, Thailand and a few BRICS (China, South-Africa). African, South-Asian and Latin American countries in our sample tend to have very few HSR training programs, if any.

There is a reasonable mix of profiles and disciplines of health systems researchers in only a few countries - all are MICs (but again by no means all MICs). In all LICs, health systems researchers tend to be isolated individuals, or else coming from a few disciplines only. Again BRICs tend to have a better mix of health systems researchers than other countries, although some non-BRICS countries (with Thailand as an obvious example) are comparable .

Although HSR capacity is low in all LICs, that does not mean there is no place for evidence-informed decision making in them (we refer here to evidence-informed decision making, assuming that the capacity of decision makers to use evidence is also part of the HSR capacity in a country). In quite a few LICs, there is at least to some extent evidence-informed decision making (in a few countries, there is no such culture). The pattern is not different for MICs: in most MICs, there is to some extent evidence-informed decision making. In China and Thailand, this seems most the case. Otherwise, regions are not very different in this respect - many countries, in every region, claim to have at least some extent of evidence-informed decision making. In about a third of the countries in our sample, the evidence-informed decision making culture is very weak.

HSR nation-wide

With a few (2) exceptions, in LICs no or very little HSR takes place. In MICs, more and quite diverse HSR takes place (although there is also very little happening in 6 of the 14 MICs in our sample). In a number of African countries (Ghana and Uganda for example), more is happening than in others. South-Asian countries do not do very well, on average.

As for funding sources, it comes as no surprise that in most LICs, if there is HSR taking place, it is mainly driven by donors, international agencies and or international consortia. Perhaps more surprising is that internationally driven HSR still plays a big role in many MICs also, for example in some of the upper-middle income Latin-American countries in our sample.

A clear preference for domestic evidence (or locally adjusted international best practices) is only obvious in a few countries in our sample (like China and Thailand). In about half of our sampled countries, there is both domestic and internationally driven HSR (but as we said, the latter predominates in most of these).

Encouraging is that in more than half of the countries in our sample, interest in HSR has been increasing recently (for example, when compared with 10 years ago).

Knowledge translation

In most countries, HSR (whether domestic and/or international) has been used in policy, but only to a limited extent. Only in a few countries HSR has not been used at all; these countries were not necessarily LICs, though. HSR is more used in policy in a number of MICs - South-Africa, China, Thailand are perhaps obvious examples, but a country like the Philippines seems to do reasonably well too. India, on the other hand, seems to lag somewhat behind.

The picture in terms of knowledge brokers was not clear. In at least half of the countries, it was not clear whether knowledge brokers played a role - our information did not allow for a clear assessment. Among the countries with (confirmed) policy brokers, there was no obvious pattern - both in LICs and MICs knowledge brokers were present.

As for structured exchange platforms between researchers and decision makers, they are more often present in MICs than in LICs. They do exist though, in a few LICs in our sample (or are starting).

Discussion

Health systems research is an emerging field in most LMICs (Gilson, 2012), and as such it is no surprise that conceptualizations of HSR differ a lot, even among health systems researchers. Despite having been identified as being engaged in HSR, most of the interviewees found it difficult to offer a precise definition of the discipline, and there is even some disagreement on the appropriate name for the discipline. The focus of these informants is mostly national rather than global, and concrete rather than theoretical – there is limited engagement with concepts such as a 'systems' approach (de Savigny et al., 2009), for example. A utilitarian or instrumental 'demand driven' view of HSR predominates: the main aim of HSR is to improve the performance of the national health system and address the real needs of the country. In the interviews, we find less evidence of an enlightening use of research, i.e. to broaden policymakers' horizon over time (Innvaer et al., 2002; Buse et al., 2005), although some interviewees do mention it. Although health systems researchers are in favour of national ownership and a purposive agenda, they do not agree with the (instrumental) claim made by many decision makers that research should be in line with their needs. While they see producing policy-relevant research as relevant, health systems researchers clearly do not see their role as just 'producing on demand'. They argue that, as health systems researchers work in a less volatile environment than policy makers, they are the ones who should take a long-term view, so they should also be ready to 'create the demand' of policy makers, if the circumstances require. This view seemed somewhat more common in MICs than in LICs, though, or at least in countries with a stronger base of health systems research. Aspirations for the discipline overall are high, even where HSR is still in its early development: there is a desire to see country agendas addressed, and sufficient independence of thought for health systems researchers to drive new policy agendas.

Expectations of health systems researchers are equally high, though often contradictory in their detail – scientific credibility and technical (even multidisciplinary) competence seem to be core requirements, but at the same time a more activist stance (even bordering opportunism) is also frequently advocated. The most effective health systems researchers are characterized as 'seeing and grabbing opportunities when they emerge', or pro-actively 'dancing with the policy makers': networking and communications skills are thus indispensable. Flexibility, an entrepreneurial spirit and passion are also essential ingredients for health systems researchers. Having said that, most interviewees acknowledge that health systems researchers need and cannot all be 'homo universalis'– it is often better if they instead operate in multidisciplinary and complementary teams, with the right mix of junior researchers and more experienced mentors. The reality in LMICs is often different, however. The picture that emerges in a number of low-and even some middle-income countries is one of isolated, under-resourced and vulnerable researchers, driven by immediate financial needs rather than a purposive agenda.

As for the research-policy interface, health systems researchers and decision makers are in many LMICs still 'two distinct communities' or 'two cultures' (Caplan, 1979, Buse et al.,

2005) with different interests, requiring policy brokers and knowledge entrepreneurs to bridge the gap (in many of these settings, brokers are lacking, though). In a few of the sampled countries, the picture is already one of 'policy networks', with researchers, knowledge brokers and decision makers no longer as separate categories but functioning as members of networks, engaged in formal and informal relationships with each other.

In the countries where they do occur, the mediating roles - whether we call them knowledge brokers, policy entrepreneurs or 'knowledge to policy and practice catalysts' (KPP catalysts) (Loewenson, 2010) are a composite of personality, caste, networks, competence and opportunism. They play a key role in translating whatever is available - local or international evidence, health metrics & indicators as well as health systems research - into influence, but the picture in the interviews is more one of interpersonal skills dynamics than one of rigor of analysis and synthesized evidence. Strategic, networking and communication skills seem to outweigh synthesizing and summarizing skills, when these brokers play a 'filtering', 'amplifying' or other KT role (WHO, 2007b). Policy brokers and entrepreneurs, whether they are institutional actors or just individual activist researchers, and regardless of the setting or institution where they are located (MoH, universities, research institutes, think tanks, donor organizations …), are never completely 'neutral' or scientifically objective, they also always have their own agenda. In this respect, although some knowledge brokers sound quite bullish about their impact and masterful strategic skills, a certain sense of humility would seem appropriate. In fact, many knowledge brokers acknowledge this. They are not the 'unbiased' Masters of the Universe, bridging the gap between health systems research and decision makers.

The same goes for health systems researchers: even if some of them think they are engaged in 'pure' research, HSR is never completely 'neutral', and as such, HSR as a discipline should remain humble. Even more so because one could argue that one of the key tasks of HSR is to reduce uncertainty in an area of complex decision making (Stacey, 2002). In addition, HSR is just one of the many possible sources of information for decision makers (Bosch-Capblanch, 2012).

Policy makers are described in pretty universal terms, allowing for the fact that LIC settings differ in a number of respects from developed countries (Carden, 2009); the influence of donors can be large, for instance. Decision makers need to set first the policy direction, it is often stressed, only then evidence can play a role. Unsurprisingly, the culture of evidence and the habit of evidence-informed policies differ greatly in the sampled countries; ad hoc or populist policies were mentioned at least as often as examples were given of health policies where HSR did play a role. Policy makers work in a more complex and short-term environment than health systems researchers, and need thus, at least in principle, to have a more holistic view, taking not just into account the health sector.

HSR capacity building is considered a general need in LMICs, even in the countries where HSR has already clearly taken off as a discipline there is still a lot of room for improvement. Focus is on individual capacity, updated curricula, more and better training programs for health systems researchers (interdisciplinary and teaching a wide range of skills, including

networking and communicating skills, as well as instilling a more decision relevant culture). To a lesser extent capacity building of decision makers is also emphasized, to boost their capacity to use HSR evidence and make them more research attuned (Lavis, 2006). Even if not to the same extent, interviewees focus on all four phases of the 'research to policy and practice cycle' (Alliance, 2004) - managing the research agenda, producing evidence through original research and synthesis of existing knowledge, promoting the use of evidence, and utilizing evidence in decision making. Besides individual capacity, there is also some attention for institutional/organizational capacity and even for system capacity (enabling environment) (WHO, 2007b), for example when interviewees stress the importance of permanent knowledge translation platforms where two-way communication and structured exchange of views can take place, or the importance of diverse teams of researchers (with junior and senior researchers, and a range of disciplines represented).

On average, one can discern a relationship between income level of a country and HSR capacity and amount and range of HSR done. Yet, even in upper-middle income countries in our sample, HSR capacity can be very limited. In about two thirds of the sampled countries, LICs as well as MICs, evidence-informed decision making occurs, although by no means for all health policies.

In some LICs, there is also the somewhat contradictory picture whereby international organisations provide capacity building and opportunity, but at the same time cannibalise the already limited skills available in the health research system. Capacity building seems to be complicit in favouring individual opportunity over institutional capacity, with often the same agencies responsible for building local capacity building it within their own structures. Donors and international consortia can also set HSR research agendas or determine which HSR evidence is taken up in policies, through the sheer power of money or authority. This seems to be the case in a number of African LICs, for instance, where national ownership of research agendas is lacking. Yet, even upper-middle income countries are not entirely immune for a situation whereby HSR is mainly driven by donors, international agencies or consortia. This was the case in some of the Latin-American countries in our sample, for example.

The list of drivers of policy uptake of HSR – facilitators as well as barriers - looks quite familiar for people acquainted with the framework of John Lavis (Lavis , 2006) or other relevant literature (Lomas, 1997; Syed et al, 2008; Rist, 1998; Ginsburg et al., 2007; Orton et al., 2011). Without necessarily framing drivers like this, interviewees emphasize that 'push' and 'pull' efforts, as well as 'exchange' (two-way) and more 'integrated' efforts all play a role in linking HSR to action, or if they are lacking, in blocking successful policy uptake. Different political contexts and settings, decision regimes (democratic versus authoritarian; open versus opaque; rational and routine, incremental or punctuated equilibrium, fundamental decision regimes… (Shiffman,2007; Carden, 2009)) or amounts of government receptivity might require different (sets of) facilitators (Ginsburg et al., 2007) and KT approaches. The same goes for different types or HSR content of evidence (technical versus more politically sensitive HSR requiring civil service reform), or different policy stages. A one-size fits all

approach is thus not recommended, nor is there a list of 'necessary and sufficient conditions' (Ragin, 1987) for HSR take-up in policy.

Nevertheless, some factors were still far more commonly advocated than others, for example professional dissemination, generation of research in line with demands of decision makers and the needs of the country, structural interaction opportunities like formalized networks and platforms, and sufficient political commitment and an evidence based culture. Many interviewees emphasize a preference, at least in principle, for domestic evidence or at least locally adjusted international best practices (see also Bosch-Capblanch for the importance of local adaptation and contextualization of HSR, 2012), but often the perceived quality of domestic HSR is lacking, hence decision makers often resort to international evidence, if they do want to take into account evidence. As already mentioned, other (power or financial clout related) factors can play a role in the uptake of international best practices. Common barriers mostly represent the reverse situation of triggers/facilitators. Political and ideological factors were also very much stressed, though, even in countries where HSR capacity is relatively good. It will come as no surprise that researchers perceive this more as a barrier than decision makers.

Conclusion

HSR as a discipline seems to be dependent on a cluster of emergent enabling factors - charismatic and strategically thinking individuals with a talent for networking, technical competence and scientific credibility, appropriate international alliances and trends, emergent local knowledge translation structures and increasing national ownership of research agendas, more and better training courses for researchers as well as workshops for decision makers to make them more attuned to each others' world and constraints, increasing trust between decision makers and researchers, a critical mass of health systems researchers and competing institutions 'able to deliver', an entry point for health systems research in decision making circles, sufficient domestic and international funding, and even political transitions, shock events or other windows of opportunity… If 'all the stars are aligned', one can even use the term 'national health research system' (Kennedy et al., 2007). In quite a few countries, the future looks bright for HSR and health systems researchers. While there was evidence of such a health research system with strong national ownership in only a limited number of countries studies, in most the need for robust health systems research is recognized, with clear indications that momentum for increased capacity in this area is building. Even where the critical set of enabling factors has not yet been established, there is a clear vision of the path needed.

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Annex A: overview of the 27 HSR Mapping interviewer teams in 26 countries

Bolivia	Lanza Van den Berghe Oscar Juan de Dios
Burundi	Manassé Nimpagaritse
Cambodia	Ir Por
Cameroon	Isidore Sieleunou
	Basile Keugoung
China (Gansu)	Xiuxia Li
	Xiao xiaojuan
China (Beijing)	Wang Yunping
	Zhou Xiaoshuan
Colombia	Jenny Mabel Carabali
	Neila Julieth
Congo DRC	Chenge Mukalenge
	Charles Kaya
Côte d'Ivoire	Bernard Kadio
	Anoh Adouko Georges
Ecuador	Villa Maria Real
Ethiopia	Tamrat Assefa
	Fassil Shiferaw
Ghana	McDamien Dedzo
	Atsu Seakekwawu
Haiti	Jean Patrick Alfred
	Adrien Demes
India	Dr Raveesha
	Upendra Bhojani
Kenya	Pamela Juma
	Faith Kerre
Liberia	Garfee Williams
	Musu Julie Duworku
Morocco	Houcine El Aknif
	Dr Hachri
Mozambique	Leonardo Antonia Chavane
Nepal	Shishir Dahal
	Gyanendra Shah
Pakistan	Asmat Malik
Peru	Larissa Otero
	Gustavo Rossell de Almeida
Philippines	Raoul Bermejo
	Raymond Macapagal
Senegal	Morris Konan Kouamé
	Maymouna Ba

South Africa	Yanga Zembe
	Hanani Tabane
Tanzania	Hildegalda Mushi
	Albino Kalolo
	Goodlucky Ikula
Thailand	Walaiporn
	Pennapa Penne Kaweewongprasert
Uganda	Patrick Bigirwa
	Victoria Kajja
Zimbabwe	Wilfred Gurupira
	Nyasha Masuka
	Tsitsi Grace Monera

Annex B: The questionnaires

Interview guide for policy-makers

To bear in mind: expected output in order of priority

How does the knowledge translation process work? (*this is key*)

What capacities are available/needed for HSR?

What HSR is being done?

Homework: make sure you know what kind of work the policy maker is involved in (now), and in the past.

1. I know that you are a X. What type of work are you currently involved in? (*try to break the ice, so that the interviewee feels at ease*)

2. Is there a health policy you were recently involved in to improve access to X? (*focus on system policy related to MDG4 or 5 (access to …), depending on the function of the interviewee; not on a biomedical one*).

3. Can you tell us a bit about the history/the proceedings of that particular policy?

- How was that specific policy topic selected as a priority? Who were the stakeholders? (*allow for lengthy explanation by the interviewee*)
- How did the policy evolve?
- To what extent did research on healthy systems play a role in this particular policy?
- What is the current state of implementation?

4. Who usually informs you, as a policy-maker; on research evidence? *Who assesses and summarizes this evidence? Is there a unit inside your department that monitors this? Or are it instead researchers, academic journals, advisors, intermediaries (knowledge brokers or so called 'policy entrepreneurs'), think-tanks, donors, lobby organizations, general press, other media e.g. international organizations (WHO, UN…), others? Please, specify*.

Are you satisfied with the way you get information? From researchers? From others?

5. In your opinion, what can be done to strengthen capacity for research and policy making?

6. How do you feel about research done in this country towards improving access to maternal and reproductive health (*or child health (depending on interviewee's job*))? What research are you currently aware of?

- *Do you as a policy-maker in this country prefer (and thus adopt) research done in this country or do you prefer international 'best practices' and evidence? What do you deem the advantages of one over the other?*
- *(in case the interviewee favours global evidence): If you favour international evidence, do you allow scope for domestic adjustment, i.e. do you see the need for context-specificity?*
- *To what extent do you keep an eye on what happens in neighbouring countries (in terms of scientific evidence and policy), countries in the region?*

7. How do you usually interact with researchers? What role does research play in decision making?

8. What could be done to boost the use of evidence in health policy decision making - how can policy makers like you be supported in using evidence? (*try to find out whether it's an issue of training, lack of capacity of HSR or of decision-makers, ideology, platforms, pressure from other stakeholders, free press, …*)

9. Do you have any recommendations for young people who want to be active in the field of health systems research and policy making?

10. Is there anything else you would like to share with us or any questions you have for us? (*this question already starts the debriefing, and the interviewer can even engage in a discussion here*)

Interview guide for Health System Researchers

To bear in mind: expected output in order of priority

What HSR is being done (nation-wide)?

What capacities are available/needed for HSR?

How does the knowledge translation process work?

Homework: Start from 2-3 articles authored by the senior researcher you are about to interview

1. I read that you are involved in X kind of research. Could you describe exactly what kind of job/research you are involved in?

2. What among the research you have just described is Health Systems Research according to you (*focus on topics not methodology*)?

   Would you consider yourself a Health Systems Researcher? (*hopefully yes; but if the interviewer says no, ask*: how would you define Health systems research?
   Building on this description of HSR (= the one you just gave), what are the 3 main themes being addressed in health systems research in your institution today?

3. Is that in line with what happens in the rest of the country? (*in other words: find out what kind of HSR is done nation-wide (focus on topics/themes rather than methods) - what are the three dominant themes/topics nation-wide; which policy issues do they try to address, …*)

   How much of health research that is conducted in this country is dedicated (nation-wide) to Health Systems Research? Can you comment on why this is the case?

- *Does it depend on capacity or funding opportunities?*
- *Is it really the priority of the researchers themselves?*

4. What kind of training did you have as a health system researcher?

   Are you involved in networks? (where you try to learn from neighbouring countries' experiences for example), communities of practice, other (research, networking and/or evidence-to-policy, ...) platforms? (here we basically want to find out whether the health systems researcher works in a rather isolated way, or is well-connected - nationally with other researchers in the field, and with policy makers, as well as internationally (with global research, evidence, research networks…)
   Is there any peer exchange?

5. What is the capacity for Health Systems research in your country? Are there any training programs?

6. How do you think the conducted research is being used and by whom?

   Have you ever been involved in a policy making process? How did it work? (*allow for lengthy elaboration by interviewee*)

   Do you actually think health systems researchers should pro-actively target and try to influence policy makers? How? (*if they say yes, find out how: either through networking, trying to influence and mobilizing policy brokers/entrepreneurs, networking with influential media voices, feeding civil society, …*).

7. In your opinion, who usually informs the policymakers? What platforms are there to facilitate this (if any)?

8. What research influences policy makers in this country (if any)? What is the impact of local research as compared to international best practices and evidence?

   If they favour international evidence, why is this so?

   (*optionally*: If they prefer international evidence, do they allow scope for domestic adjustment, i.e. do they see the need for context-specificity?

9. Finally, what is your recommendation for young people that want to be active in the field of health system research and policy making?

10. Is there anything else you would like to share with us or any questions you have for us? *(= start of the debriefing, the interviewer can engage in a real discussion now with the interviewee, if appropriate*)

Interview guide for knowledge brokers/advisers/policy entrepreneurs

To bear in mind: expected output in order of priority

How does the knowledge translation process work? (*this is key*)

What HSR is being done?

What capacities are available/needed for HSR?

Homework: preliminary mapping of the (HSR, preferably related to MDG 4/5)) knowledge brokers in your country (in collaboration with the Alliance and ITM team) - where are they situated, are they senior advisors to policy makers, are they instead working outside the government (in think tanks, civil society, in WB or WHO country offices (due to their convening roles)…). So try to list them in different categories - part of the task is to get an idea about the variety of the players with knowledge broker roles (in your country, but also with a view on cross-country comparison).

(*To get a rough idea about who these brokers are, you could for example find out whether there has ever been a priority setting exercise for HSR. The person(s) who organized it, could turn out to be the knowledge brokers you want to talk to*.)

1. What experiences have you had in policy/decision making processes? Do you act as a knowledge broker, a go-between between researchers and health policy makers? (*try to break the ice*)

2. Could you tell us about a health policy decision-making process (for example, a shift in policy, a process that already has been going on for several years, priority setting, …), preferably one you were involved into?

   *How does this particular **health policy** process that you are involved in, unfold? (Try to find out whether it's a relatively organized, rational and transparent process, or instead a messy process, with lots of stakeholders trying to influence the policy)…? What is the role of political leadership, media, advocacy, policy brokers/entrepreneurs (like you)… (and technocrats & experts) ? How do you play your role (=trying to get more evidence into policies) in this case ? Importantly, what role did evidence, from research, play in this health policy process.*

   What structures could be put in place to facilitate the process? (still focus on this particular policy) ? Are other people/institutions more effective to facilitate this process?

   When you try to get evidence in a policy like this one, which challenges do typically pop up? (for example, try to find out whether they have the feeling that policy makers value research enough, whether lobbyists are too influential, whether research is of poor quality,…)

3. What role does research play when decisions are taken in health policy in this country? (*now focus on the general picture, beyond this particular health policy that they have been involved in - focus on health systems research !*)

   What do policymakers need to use and access research? Is there alignment of research priorities with policy priorities? How are priorities in both set?
   Are there any tools/platforms/networks… you are aware of that are being used to fit research into policy?

   Are policy-makers satisfied with the way they get information? From researchers? From others?

4. How are policymakers supported in using (health systems) research evidence?

5. What could be done to facilitate the use of evidence by policy makers?

   How can policymakers be supported in using more evidence in their policy decisions? (*here try to find out whether it's an issue of lack of capacity (to use research evidence) among decision makers, or whether other (perhaps more important) factors play a role in discarding research (for example, lobby's, ideological reasons, …*)

   What are the most appropriate mechanisms for the efficient transfer of research evidence? (i.e. mechanisms that are in place or that could be set up).

6. Finally, what is your recommendation for young people that want to be active in the field of health system research and policy making?

7. Is there anything else you would like to share with us or questions you would like to ask of us? (*this final question already kicks off the debriefing - the interviewer can now start a discussion, if appropriate*)

Annex C: Overview tables on HSR Capacity, Policy Uptake and Generation of HSR knowledge per country and per region

HSR capacity:

Country	LIC/MIC	Region	*HSR capacity*			
			HSR capacity	HSR Training programs	HSResearchers' profile	Evidence-informed culture decisonmaking
			none or limited - intermediate - good	yes/no	few disciplines/broad mix of disciplines	yes/no (remark: this question is about the research literacy and commitment of decisionmakers)
Haiti	LIC	Central America	limited	no	very few people	to some extent
Congo DRC	LIC	Central Africa	limited	very little	very few people	no
Burundi	LIC	Central Africa	limited	no	a few isolated individuals	no
Liberia	LIC	West-Africa	limited	no information	few disciplines	very little, but increasing
Tanzania	LIC	East-Africa	limited	very little	a few people	to some extent
Ethiopia	LIC	East-Africa	limited	no	some disciplines	to some extent (but politics and donors also play a big role)
Mozambique	LIC	East-Africa	limited	no	very few people	no (although some attempts to improve this)
Zimbabwe	LIC	East-Africa	limited	not clear	few disciplines	to some extent
Uganda	LIC	East-Africa	limited but emerging	very little	some disciplines	to some extent
Kenya	LIC	East-Africa	limited to intermediate	no	few disciplines	to some extent
Nepal	LIC	South-Asia	none or very limited	no	a few isolated individuals	no
Cambodia	LIC	South-East Asia	limited	no or very little	a few people	to some extent (but there is not much HSR)
Morocco	LMIC	North-Africa	intermediate	yes but most have gone abroad for training	some disciplines	yes
Ghana	LMIC	West-Africa	intermediate	no information	mix of profiles	to some extent
Senegal	LMIC	West-Africa	limited to intermediate	very little	few disciplines	to some extent
Côte d'Ivoire	LMIC	West-Africa	very limited	no	a few isolated individuals	no
Pakistan	LMIC	South-Asia	limited	very little	few disciplines	to some extent (but politics and donors also play a big role)
Philippines	LMIC	South-East Asia	intermediate to good	yes (but scattered in other curricula/programs)	mix of profiles	to some extent (more for decision makers appointed by president than for elected officials)
India	LMIC	BRIC	limited to intermediate	very little	some disciplines	no (but in a few states, there is)
Bolivia	LMIC	Latin America	very limited	no	a few people	no
Colombia	UMIC	Latin America	intermediate	no	few disciplines	to some extent
Ecuador	UMIC	Latin America	very limited	no	a few people	to some extent
Peru	UMIC	Latin America	limited	very little	not clear	to some extent (increasing, but still a long way to go)
South-Africa	UMIC	BRIC	intermediate to good	yes	mix of profiles	to some extent (but politics and donors also play a big role)
China	UMIC	BRIC	good	yes	broad mix, but can still be improved	yes, especially at the higher levels of decision making
Thailand	UMIC	South-East Asia	good	yes	broad mix (but interviewees still mention more are needed)	yes

Generation of HSR knowledge:

Country	LIC/MIC	Region	*Generation of HSR knowledge*			
			HSR done	**Types of HSR done**	**HSR driven domestically or mainly by donors/international research consortia**	**Recently increased interest for HSR?**
			no/very little/some/a lot	**(some kinds of topics/kinds of research, or a broad mix of research)**	**Domestic / internationally driven / both**	**Yes/no/already strong interest for a while**
Haiti	LIC	Central America	no	no	mainly internationally driven	not really
Congo DRC	LIC	Central Africa	very little	little	mainly internationally driven	a little
Burundi	LIC	Central Africa	no	little (most is on health financing)	internationally driven	not really
Liberia	LIC	West-Africa	some	mix of topics is increasing	mainly internationally driven so far	yes
Tanzania	LIC	East-Africa	very little	some topics (but many gaps)	both but mainly internationally driven	yes
Ethiopia	LIC	East-Africa	very little	some issues (but many gaps)	mainly internationally driven (but domestic interest increasing)	yes
Mozambique	LIC	East-Africa	very little	very little	mainly internationally driven	not really
Zimbabwe	LIC	East-Africa	little	little (less than before)	not clear	probably yes, but still long way to go
Uganda	LIC	East-Africa	some	mix of topics (WHO building blocks)	both (but mainly internationally driven)	yes, emerging
Kenya	LIC	East-Africa	very little	little	both with international predominance	yes
Nepal	LIC	South-Asia	no	very little - by individuals	internationally driven	no
Cambodia	LIC	South-East Asia	little	little (most is on health financing)	mainly internationally driven so far (but domestic interest increasing)	yes
Morocco	LMIC	North-Africa	some	mix of topics	both	yes
Ghana	LMIC	West-Africa	some - quite a bit	mix of topics	both (but international HSR still preferred by decision makers)	already quite some interest
Senegal	LMIC	West-Africa	very little	little (most is on health financing)	both (but mainly internationally driven)	a little
Côte d'Ivoire	LMIC	West-Africa	very little	little, almost inexistent	mainly internationally driven	not really
Pakistan	LMIC	South-Asia	very little	some topics (but definitely far too little)	both but mainly internationally driven	a little
Philippines	LMIC	South-East Asia	some	mix of topics (but gaps)	both	yes (much more than 10 years ago)
India	LMIC	BRIC	some	some topics (but definitely far too little)	both (with international predominance)	yes (at least in a few states)
Bolivia	LMIC	Latin America	no	little	internationally driven	a little
Colombia	UMIC	Latin America	some	little (most is on health insurance and its outcomes)	both	a little
Ecuador	UMIC	Latin America	very little	little	internationally driven	yes but emerging
Peru	UMIC	Latin America	very little	some issues (but many gaps)	mainly internationally driven so far	yes
South-Africa	UMIC	BRIC	some	broad mix, but still a lot of gaps	internationally driven (at least in terms of funding)	yes, since 2004
China	UMIC	BRIC	a lot	a broad mix, but still gaps	both, but decision makers seem to prefer domestic evidence (or international best practices, locally adjusted)	already strong interest for a while (and especially compared with the 90s)
Thailand	UMIC	South-East Asia	a lot	broad mix, but still gaps	both (but definitely mainly driven domestically, and preference for domestic evidence)	already strong interest for a while (last decade or so)

Policy uptake:

Country	LIC/MIC	Region	*Policy uptake*		
			Has HSR been used?	Knowledge broker involved	Structured exchange platforms
Categories			No/limited use/used often	Yes/No	yes/no
Haiti	LIC	Central America	limited use	not clear	no
Congo DRC	LIC	Central Africa	limited use	no clear	no
Burundi	LIC	Central Africa	limited use	Yes	no
Liberia	LIC	West-Africa	limited	no information	limited, but starting
Tanzania	LIC	East-Africa	limited use	yes	no
Ethiopia	LIC	East-Africa	limited use	yes	yes (only recently put in place, not known by all)
Mozambique	LIC	East-Africa	lmited use	no	no
Zimbabwe	LIC	East-Africa	yes	not clear	no
Uganda	LIC	East-Africa	yes	yes	no
Kenya	LIC	East-Africa	limited use	not clear	yes (but led by money)
Nepal	LIC	South-Asia	no (only international best practices)	no	no
Cambodia	LIC	South-East Asia	limited use	not clear	limited
Morocco	LMIC	North-Africa	yes	yes	yes
Ghana	LMIC	West-Africa	limited use	yes	no (but before there were, due to donor initiatives)
Senegal	LMIC	West-Africa	limited use	not clear	to some extent
Côte d'Ivoire	LMIC	West-Africa	not really	not clear	no
Pakistan	LMIC	South-Asia	limited use	yes	no
Philippines	LMIC	South-East Asia	yes	yes	yes
India	LMIC	BRIC	limited use	no	no (but in a few states, this is starting)
Bolivia	LMIC	Latin America	limited use	not clear	no
Colombia	UMIC	Latin America	limited use	not clear	limited
Ecuador	UMIC	Latin America	not really	not clear	no
Peru	UMIC	Latin America	yes	no information	yes
South-Africa	UMIC	BRIC	yes	not clear	to some extent (but mostly advisory committees)
China	UMIC	BRIC	used often	Yes/No	yes (a mix of channels, structured and less structured)
Thailand	UMIC	South-East Asia	yes	yes	yes