

**MULTIPLE UNDERSTANDINGS OF BIOTECHNOLOGY POLICY CONVERGENCE IN SOUTHERN  
AFRICA: IMPLICATIONS FOR THEORY AND PRACTICE**

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## **Abstract**

Policy convergence, defined as the growth in similarity of policies over time, constitutes a central concept in comparative public policy, yet a great deal of ambiguity and contention surrounds it. The basic objective of this paper is to discuss the conceptual and practical meanings of policy convergence in southern Africa within the context of cross-national biotechnology regulation. The paper will also explore, from practical and theoretical viewpoints, the relationships between policy convergence and related theoretical concepts. This analysis is being made as part of the broader investigation into an understanding of the ways in which three supranational organizations, the African Union (AU), the New Partnership for Africa's Development (NEPAD) and the Southern African Development Community (SADC) may be influencing the process towards converged systems for managing biotechnology within the SADC region. This paper argues that an illumination of the different framings of convergence is crucial, not for the sake of eliminating differences between these understandings, but in order to highlight these divergent realities faced by the policy making process.

## **Introduction**

Many attempts have been made to create international protocols which could facilitate the emergence of similar national systems for managing technologies, and a number of these efforts relate to biotechnology. For example, the Cartagena Protocol on Biosafety is viewed as one mechanism that has sought to balance at a global level the risks and benefits of modern biotechnology (encompassing genetic engineering, tissue and organism cloning and genomics). Biotechnology is a pervasive technology, which brings together interests from many sectors from the product development phase to the product marketing, utilization and disposal phases. Management of this technology at the policy and regulatory levels is therefore inherently multi-level and multi-actor, and this brings both challenges and opportunities for policy actors. In the SADC region, there have been many efforts since the early 2000s towards developing and implementing similar systems for managing biotechnology (biosafety systems) within the fourteen country economic grouping. There are many individual, institutional, sectoral, national, regional and international players in these efforts and their multiplicity and varying levels of involvement in the issue in space and time brings many dynamics to these efforts for developing systems.

From an on-going analysis of the ways through which three supranational organizations, NEPAD, AU and SADC are influencing the cross-national biotechnology policy convergence process in the SADC, it has been observed that there are different understandings of policy convergence within the various actor groups, and these have varying impacts on the progress towards the envisaged convergence. In fact the aspect of multiple understandings of convergence is emerging as one of the many subplots within the overarching research question of how the three supranational bodies mentioned above are influencing processes towards cross-national convergence of the regulatory systems. The purpose of this paper is therefore to advance and discuss the implications of these multiple and fluctuating understandings of the progress towards the potentially converged systems and on established theoretical perspectives within realms pertinent to policy studies such as systems, institutions, regimes, actor coalitions and networks.

Following this brief introduction, the rest of the paper continues with an overview of biosafety and policy convergence in the SADC, then gives some theoretical perspectives on policy convergence followed by a brief overview of the data gathering methodology used. Empirical results are then presented, analyzed and discussed, followed by some conclusions.

### **Biosafety: from national to regional levels**

Biosafety, defined broadly as the safe application of biotechnology, is regulated at the global level through the Cartagena Protocol on Biosafety (CPB or the Protocol), which is a Protocol of the Convention on Biological Diversity (CBD). The CPB was adopted by the Conference of Parties to the CBD on 29 January 2000 (UNEP, 2006). Even before the advent of the CPB, there were many efforts to build regulatory and technical capacity in countries (including developing countries) for the development and enforcement of mechanisms for safe use of biotechnology. Many policy and regulation development models used elsewhere in the world have been used by governments and organisations in developing countries in their policy development processes (e.g. the ISNAR and UNEP models and the African Union Biosafety Model Law, cf. Paarlberg, 2000). Lessons have also been drawn from the European and American experiences. However, despite all these efforts very little success has been met, and looking specifically at southern Africa, only five out of the 14 countries in the Southern African Development Community (SADC) region have managed to put in place functional biosafety systems in the last 10 years (Mumba<sup>1</sup> pers comm., 2007; SADC 2004; BTZ, 2002). These five are South Africa (1997), Zimbabwe (1998), Mauritius (2002), Malawi (2003) and Zambia (2007). The other countries either have advanced drafts of legislation which are being discussed or are nearing discussion at parliament level (Namibia, Tanzania, Botswana and Swaziland) or still have draft guidelines and other preliminary documents being developed by committees of experts set up by government (Lesotho, Mozambique, Congo DR, Seychelles and Angola) (see Omamo and von Grebmer, 2005 and Kalibwani et al 2004). Even within each category the countries do not necessarily have the same policy and regulatory arrangements, and they have employed different approaches and mechanisms to attain that particular status, and the lengths of time and amount (and type) of resources<sup>2</sup> spent to achieve this also differ.

Currently, although all the SADC countries have signed and/or ratified the Protocol, they are all still grappling with domesticating its provisions into their respective national legal systems (Mayet<sup>3</sup>, pers comm., 2007). This has been due to a number of factors, including the perennial lack of prioritisation of biosafety issues in the respective national agendas, lack of financial resources and trained manpower or expertise in the field of biotechnology, as well as limited awareness of biotechnology issues by policy makers, lawyers, scientists and the general public (RAEIN-Africa, 2005). The absence of active research programmes employing modern biotechnological techniques in the majority of the countries has also been seen as a hindrance to the development of national policies and regulations. In other words, there is a lack of adequate technological developments

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<sup>2</sup> Resources here include policy/legislation models used as well as the common financial, human and other material resources

<sup>3</sup> Mariam Mayet is an environmental lawyer and director of the Johannesburg-based African Centre for Biosafety

to act as a catalyst for development of regulatory mechanisms (Ushewokunze-Obatolu, 2004, Jaffe, 2006)<sup>4</sup>.

While all these developments are going on at national level, there has also been a number of declarations and initiatives towards convergence of biosafety systems in Africa, both at the continental level and at sub-region level, in this case specifically at SADC level (see Table 1 below). Convergence entails increasing similarity among policies and some of the mechanisms through which cross-national convergence can be achieved for example harmonization, coercive imposition of policies and policy diffusion (see Busch and Jorgens, 2005, Holzinger and Knill, 2005), will be referred to in the ensuing discussion. Meanwhile, Table 1 below shows some of the organisations that are engaged in activities towards cross-national convergence of biosafety systems in Africa:

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<sup>4</sup> This technocentric view is shared by many scientists in the region, while those less optimistic, notably anti-biotech lobbyists feel the issue needs to be looked at within the bigger macro context of individual countries and the region

**Table 1<sup>5</sup>: Organisations, geographical area of operation and focus of their activities in the cross-national convergence of biosafety systems in Africa**

<b>Organization(s)/ Processes</b>	<b>Geographical level of operation</b>	<b>Focus of biosafety activities</b>
The Cartagena Protocol on Biosafety to the Convention on Biological Diversity	Global	Sets global rules and regulations on the transboundary movement, transit, handling and use of living (genetically) modified organisms that may have adverse effects on the conservation and sustainable use of biological diversity, also taking into account risks to human health.
The African Union (AU), formerly Organization of African Unity (OAU)	The whole of Africa	Set up a group of experts in June 1999 to draft a comprehensive framework of biosafety regulations that would serve as a model law to protect Africa's biodiversity, environment and the health of its people. This initiative resulted in the African Model Law on Safety in Biotechnology which was finalized in May 2001. Currently in the middle of implementing an Africa-wide Capacity Building Programme in Biosafety with funding from the Germany government.
The Southern African Development Community (SADC)	14 countries in southern Africa	Set up an Advisory Committee on Biotechnology and Biosafety in 2003 which later drafted guidelines/recommendations on handling of food aid; policy and regulations (including harmonization); capacity-building; and public participation in biotechnology and biosafety. The Committee was later disbanded, and the currently there region is developing a Protocol on Science, Technology and Innovation in which harmonization of biotechnology policies and regulations is one of the targets.
The New Partnership for Africa's Development (NEPAD)	The whole of Africa	In 2005 the NEPAD, in partnership with the AU set up a high level African Panel on Biotechnology (APB) to analyze the African biotechnology terrain and make recommendations on how best to use the technology for Africa's development, including developing an African strategy on biotechnology and biosafety. The APB is mandated to propose and promote the adoption of a regional strategy that reflects Africa's common values, articulates shared needs and focus on common opportunities (See also Africa's S&T Consolidated Plan of Action, 2006). The Panel has produced its report (2007) and adoption of this report by regional economic communities and dissemination of the report to strategic partners is in progress.

<sup>5</sup> Table designed by author with information sourced from Ayele (2006), [www.nepad.org](http://www.nepad.org), [www.unep.org](http://www.unep.org), [www.africanunion.org](http://www.africanunion.org), [www.sadc.int](http://www.sadc.int) (accessed May 2007)

<p>The United Nations' Environment Programme (UNEP)</p>	<p>Some of the countries across the continent</p>	<p>With funding from the Global Environmental Facility (GEF), the UNEP's Global Project on the Development of National Biosafety Frameworks began in June 2001, and was designed to assist countries develop their National Biosafety Frameworks. The project also aims to promote information sharing and collaboration, especially at the regional and sub regional levels. The project's overall objective is to help countries comply with the CPB. Countries in the SADC participate in this programme at different levels.</p>
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There are other players whose activities aid in the thrust towards a harmonized/converged regional biosafety system. Among others these include: the Common Market for Eastern and Southern Africa (COMESA)<sup>6</sup>, the Southern African Customs Union (SACU), USAID, and regional and local-level civil society organizations. Cross-national convergence of biosafety systems is seen as desirable from economic, regulatory, technological and environmental view-points as in all cases it will allow countries to share resources, draw lessons from each other, shorten technology and product approval processes and also positively impact on the environment conservation efforts of many of the countries (Ayele, 2006). However, the motivation and compelling factors for convergence (among other factors), from international and national perspectives are being observed to be in a continual state of fluctuation, and this poses major challenges to the feasibility of convergence.

**Theoretical perspectives on cross-national policy convergence**

According to Holzinger and Knill (2005), the first studies in the area of cross-national policy convergence date back to the 1960's, although the topic itself gained further popularity in the 1990s. The growth in international trade and commerce brought about by developments in technology in the last fifteen to twenty years – commonly referred to as globalization - has been mentioned as the major reason behind the increased interest in cross-national policy convergence studies (Faria, 2002). The 1990s also mark the period in which issues on European integration came to the fore, with a number of researchers investigating the domestic impact of the Europeanisation drive and cooperation of European countries on matters of biosafety, and also the 'transatlantic' issues (see Holzinger and Knill, 2005; Murphy and Levidow, 2006; Wield et al, 2004).

While so much interest has been generated and there has been extensive research on policy convergence, many researchers still feel that there is limited understanding of the causes and conditions of policy convergence. This has been attributed mainly to two major reasons. Firstly, most of the studies have focused on gathering empirical evidence to demonstrate convergence at the expense of contributing to development of theories. Secondly, the heterogeneity of the policy convergence research field has resulted in

<sup>6</sup> In May 2006, COMESA stakeholders endorsed plans by the COMESA to develop a regional policy on GMOs, to cover issues on commercial planting, trade and GM-food aid. Among other issues, a regional centre of excellence in biotechnology and biosafety and an expert's panel will be set up (ISAAA, CropBiotech Update, June 2006).

issues being looked at from diverse research and theoretical perspectives (Hozinger and Knill, 2005; Heichel et al, 2005, Lenschow et al, 2005). This not only imposes restrictions on comparability of research findings, but also brings problems even in definitions and distinction of convergence from closely related terms such as policy transfer, policy diffusion and isomorphism (Seeliger, 1996). A number of methodological pitfalls, some based on how convergence is conceived, have also been identified (Holzinger, 2006)

Policy convergence is broadly defined as the growing similarity of policies over time (Kerr, 1983 and Knill 2005) and policy convergence studies are thus concerned with the similarity of policies as an observable phenomenon. Policy diffusion, transfer, learning and harmonization are viewed as pathways or mechanisms towards convergence. Scholars in these areas are in agreement on this (see review by Heichel et al, 2005). It is however, acknowledged that convergence may be a result of other problem pressures and not necessarily the ones mentioned above (Knill 2005). In addition, similarity, which is the main concept fundamental to convergence research, is viewed as arbitrary and ambiguous. Sartori (1991) argues that being “similar or different is a matter of degree and the cut off point can be set arbitrarily”. These ambiguities manifest themselves in many ways, including how the convergence can be achieved and how to define the convergence.

Studies on policy convergence have been carried out in many policy areas, most extensive of all being on social policy, fiscal policy, environmental policy and trade policy. There have also been some, but fewer studies on health policy, migration policy, agricultural policy and education policy (Heichel et al, 2005). With respect to biotechnology and biosafety, some studies have examined harmonization in the EU (see Levidow et al, 1996). In their review of empirical studies on policy convergence, Heichel et al (2005), also note that while the number of policy areas covered is fairly broad, a major limitation has been in the geographical regions covered by the studies. The majority of the studies have been carried out in Europe and North America, with very few being carried out in Latin America, Asia and Africa. They attribute this to lack of available data and also to the heightened interest in Europeanization and globalization issues which are easier to examine in integrated markets. The authors acknowledge that it is ‘still not possible to characterize convergence research as a global phenomenon because [researches on] Africa and Asia, for example are still underrepresented ...’. Even some of the key people championing convergence efforts in Africa have acknowledged the lack of academic input in the various processes taking place (John Mugabe<sup>7</sup> pers comm., 2004). There is thus a need for processes towards convergence of biosafety systems in Africa to be studied and analyzed. This will enable fuller and more detailed insights into these processes and for empirical evidence from Africa to contribute to this growing field of convergence studies as well.

With respect to the theoretical frameworks used, Heichel and his co-authors acknowledge that while there has been an increased interest in convergence research in the last two decades, there is a diversification in research design. They attribute this partly to the huge emphasis on finding evidence of convergence as opposed to theory building and partly to the heterogeneity of researchers and disciplines taking part in convergence research. They conclude that some work still needs to be done with respect to developing common ground in convergence research for ‘research designs,

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<sup>7</sup> Dr John Mugabe is the Director/Advisor of the NEPAD Office of Science and Technology

concepts and operationalisations' (Heichel et al, 2005). Understanding how convergence is framed will help in this regard.

Convergence is generally accepted to be a result of many mechanisms which include harmonization, coercion, diffusion and policy transfer (Jordan, 2005, Holzinger and Knill, 2005, Busch and Jorgens, 2005, Seeliger, 1996). The main limitation in current literature on convergence research is that most of the work has focused on single mechanisms. The typology proposed by Busch and Jorgens is an attempt to look at a combination of mechanisms and to provide a framework to explain the multiple understandings and interpretations of the phenomenon. Lehtonen (2006) applied this typology to the environmental performance reviews (EPRs) carried out by the Organization for Economic Cooperation and Development (OECD) in its member countries. He found the typology useful and he concluded that the mechanisms in operation, which are mainly social learning, socialization, persuasion and soft coercion, are dependent on the fact that the OECD is an organization without direct regulatory power; and also on the existence of environmental change agents in the member countries. Application of this typology in the SADC region on biosafety issues therefore promises to provide new insights.

A look at the reasons for and implications of existence of multiple interpretations of convergence is an important component of the quest to understand the convergence processes. This is because from the onset, the divergent understandings and perspectives represent essentially why there is need for convergence in the first place. This is akin to the rationalist notion that 'problems create the incentives for their solution' (Haas, 2004). Like many other policy arenas, the biotechnology or biosafety arena has a wide range of issues and it is hardly conceivable for there to be an organization with the mission and resources to be able to tackle all the pertinent issues. As Haas (2004) explains;

"the efficiency gains from relying on one single source of policy advice are more than offset by the loss of legitimacy, analytic blinders imposed by relying on just one institutional source ... and the political doubts of bias ...".

Divergent views are thus inevitable and represent the reality on the ground. The purpose of this analysis is to situate the theory and the practice within the realities in order to enable an evidence-based decision formulation process. One main interest is to understand how achievable the convergence agenda is in the context of these divergent understandings, and at what cost to the holders of the different perspectives. All this takes place in the backdrop of an understanding that stakeholder pressures influence policies (cf Chataway et al, 2006)<sup>8</sup>.

## **Methodology**

The different meanings associated with convergence were identified largely based on an analysis of documents from various institutions taking part in efforts towards development of converged systems. Responses from interviews conducted among stakeholders in the SADC region and beyond as part of the bigger study were also

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<sup>8</sup> Stakeholder 'loyalty' to policy agendas when their issue framing is ignored or sidelined is part of the investigation in the bigger research

carefully analyzed for the different framings of convergence<sup>9</sup>. An evaluation of both the formal and informal discourses<sup>10</sup> on biosafety and in the broader science and technology arena was carried out in order to gain a wider understanding of the issue. One of the main difficulties with this task is that in their day-to-day work on biosafety issues, stakeholders hardly refer to their work in convergence terms, and in some cases biosafety is not a prominent issue on the day to day policy agendas. However, it is for these reasons that an understanding into the various conceptual and practical meanings of convergence was sought. It had emerged from earlier interactions with the various stakeholders and operatives in the policy arena that the process employed in the drive for convergence was equally, if not more important, than the envisaged convergence itself. Issue framing, in this case interpretation of convergence, is part of the process towards the desired end.

### **Presenting the emerging understandings**

Using discussion and interview results and observations from the interactions with stakeholders, a compilation of different meanings or accounts of convergence was developed. The understandings have been classified according to a number of factors (see Table 2).

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<sup>9</sup> The respondents included regulators/policy makers, NGO workers, scientists, research managers/administrators, representatives of international development partners and staff from the three supranational organizations,

<sup>10</sup> 'Formal' refers to discussions or issues raised while respondents were speaking in their official capacities (e.g. in meetings/workshops, interviews etc) while 'off-the-record' or personal views and other opinions outside the official setting are referred to as 'informal'.

**Table 2: The different understandings of convergence as observed from stakeholders**

<b>Description</b>	<b>Scope</b>	<b>Main stakeholders behind understanding</b>	<b>Categorization (Broad or Narrow focus)</b>	<b>Organization where particular focus is dominant</b>
<b>Output-focused<sup>11</sup></b>				
Convergence on biosafety and allied issues	Risk regulation, Technology development	Scientific R&D institutions	Broad focus	NEPAD
Convergence on biosafety only	Risk regulation	Policymakers, food relief agencies/civil society organizations (CSOs)	Narrow focus	AU, SADC
Convergence with respect to risk assessment only	Risk regulation	Policymakers, food relief agencies/CSOs	Narrow focus	AU, SADC
Implementation at regional level	Collaboration with neighbouring countries	Regional bodies, scientific R&D institutions	Broad focus	AU, NEPAD
Implementation at national level	Focusing on serving national interests	Relevant government departments	Narrow focus	SADC

<b>Process-focused<sup>12</sup></b>				
Co-evolution of technology and regulations	Risk regulation Technology development	Regional bodies, scientific R&D institutions, relevant government departments	Broad focus	NEPAD
Convergence on regulations only	Risk regulation	Policymakers, food relief agencies/CSOs	Narrow focus	AU, SADC
Involve policy makers only	Focus on the top	Policy makers, food relief agencies	Narrow focus	SADC

<sup>11</sup> Referring to the policies/regulatory systems

<sup>12</sup> Referring to the path being followed to come up with the policies or regulatory systems

Involve all key stakeholders	Broad stakeholder consultation	CSOs, some government departments	Broad focus	NEPAD
Stepwise in terms of geographical and institutional coverage	Structured and bottom-up focus	Regional bodies, R&D institutions, policy advisers	Narrow focus	All three reflect this at certain stages
Holistic and all-encompassing approach through and through	Combinations of approaches	Regional bodies, R&D institutions, policy advisers	Broad focus	As above

The different understandings above represent various dimensions of issues around convergence; among them being **what** should converge, **who** should be involved in the processes towards convergence, **where** should convergence take place, **how** should convergence take place, **why** should convergence take place? The characterization as broad versus narrow or process-based versus output-based perspectives of convergence is based on the different opinions or responses to these clusters of questions. Narrow-focused understandings are defined as those looking at convergence of regulations only or the practice within the technology only, while the broader understandings cover both the technology, the regulations and pertinent issues in allied areas such as seed laws and intellectual property rights. Narrow-focused understandings also propose limited time scales and geographical scope with respect to feasibility of convergence. Process and output-based accounts, on the other hand relate to the different ways of achieving convergence (the process) and the resultant policy or regulatory arrangements (the outputs). Many issues emerge from this typology and also from the perspectives behind this representation, and these will be looked at more closely.

The distinctions between the broad against narrow (or process versus output-based) accounts with respect to the responses to the clusters of issues above are not as clear-cut as shown here, and this is due to a number of reasons (cf Carr, 2006). The following are some of the reasons behind the different and fluctuating framings:

***Fuzzy/unclear understanding of terms***

On one extreme, there are policy actors who do not seem to fully understand the meanings of the terminologies they use and the differences between them and other related terms. One researcher from a scientific and industrial research and development institution in Zambia indicated that he ‘was confused as to whether what is required is consensus, unanimity or coherence ...’, though he ‘felt the desired end is to have regulatory systems that speak to and understand each other’. He also bemoaned the lack of arrangements to introduce and equip policy actors adequately to deal with challenges in the policy innovation arena. This is a serious problem in some cases and one of the reasons could be what Alvin Weiberg observed in 1972 about scientists ‘[that] often they were asked to provide advice that exceeded their formal disciplinary training’ (cited by Haas, 2004). There is thus an issue of actors facing the challenge of moving, for

example, from being policy implementers to being policy developers, without the necessary exposure and experience.

On the other extreme, there are some policy actors who get locked into certain framings and understandings, mainly to be seen to be in sync with current discourses, and to be able to secure funding from donors. This is particularly the case with process-based accounts. For example, multistakeholder or participatory processes seem to be the mantra for civil society-driven processes, and whether or not this brings the required efficiency may be quite another issue. The following observation in August 2006 from one coordinator of a regional biodiversity programme in the SADC typifies this dilemma:

*“Let’s not forget that there are two key issues here; the problems exist here, but they are identified (from) elsewhere, and the agenda to address them is set elsewhere too. So we have to comply ... with the problem-packaging and the solution-packaging”.*

### ***Rivalries, alliances and organizational mandates***

Contested power, competence and legitimacy issues between and among institutions also lead to some institutions and/or individuals wanting or adopting certain framings at the expense of others. The same is also true where institutions want to identify with the practices in another institution, to the extent of adopting similar practices. There are thus understandings based on rivalries or alliances among institutions. For example, two leading supranational organizations have had their staff failing to attend meetings of the joint committee set up by these two organizations because of the fundamental conceptual differences between the two organizations. A respondent from one of the institutions was very emphatic that; “... this joint committee is just a requirement of the donors, otherwise we have no [further] grounds on which to cooperate”

The mandates and missions of different institutions have a major influence on how they frame the convergence issue, and this in turn depends on the actor coalitions around each institution and the issue at hand. Fluctuations within the actor coalitions sometimes result in fluctuations in framings. Further complications emanate from the fact that the different actors are at various vertical and horizontal levels, ranging from institutional, sectoral and national to international levels.

### ***Varying demands on convergence of ideas***

The level of interdependence among institutions varies considerably in space and in time, and this leads to constant shifts in the understandings. For example, in international fora (e.g. negotiations and discussions under the Biosafety Protocol) institutions that are ordinarily rivals within the region may be forced to present a unified agenda, and this causes a temporary, though sometimes permanent shift in the understanding. On the other hand, allied institutions may present divergent faces as a way of trying to develop some unique selling points for their programmes. One respondent from a policy analysis network in the SADC region indicated that:

*“when all factors have been taken together, our agendas and the way we discern and implement processes is influenced more by providers of funding, than by the local policy communities we intended to serve ... our own visions vary with those of the providers of funding”.*

Early 2006 saw southern African partners on both divides of the biotechnology debate participating in a preparatory meeting for the Cartagena Protocol on Biosafety Conference of Parties (COP) meeting that was held in Brazil. The coming together in the preparatory meeting was possible because, as one senior official in a regional biodiversity management programme observed:

*'...a donor came along and gave the region funds to prepare that way so that a regional voice could be developed' ... but '... as it turned out, when we got to Brazil, everyone teamed up with their traditional international partners ...'*

### **Resources**

Linked to the issue of mandates and missions, is the issue of resources for implementing programmes. Many institutions and programmes have to contend with a narrow remit of issues because of restricted resources. Resource availability thus dictates how stakeholders or clusters of stakeholders should understand an issue, in the process influencing what is deemed feasible. It is argued that availability of resources can propel development towards a common pattern despite disparate politics, ideology and culture (McGaughey and Cieri, 1999). In fact, respondents highlighted the issue of resources as both the biggest hurdle to, and determinant of the potential path to be taken by policy processes.

### **Mobility of policy actors**

Then there is the issue of policy actors moving from one policy arena to another, either in pursuit of new employment opportunities, or as part of the routine 'surfing' to fill capacity gaps (cf Hilgartner and Bosk, 1998). This not only leads to a continual fluctuation of the understandings of the issue among groups of actors, but further blurs the distinctions between the different categorizations of understandings. Policy actors also find themselves not having enough time to adequately prepare for, or consider issues, as one respondent from a national farmers' union indicated:

*"...being in this position can be distressing sometimes, as I have to deal with many issues, from HIV/AIDS, climate change, pollution, and then this (biosafety and biotechnology). And I have to represent my organization on all these issues. Coping with the demands is never easy, especially keeping up with the latest developments. Half-baked jobs are the order of the day"*

In addition to the above challenges emanating from capacity constraints, there are country-specific conditions that influence understandings towards certain policy positions/conceptualizations. Appreciation of these drivers is crucial for shaping interventions within the multi-actor arena. For example, there are countries which have a long tradition of being risk-averse (e.g. Zambia<sup>13</sup>) and always waiting for technologies to mature before they take them on board. Such countries are, not surprisingly more towards the narrow, country- and biosafety-centric measures. A country's or an institution's capacity to create, acquire, accumulate, diffuse and utilize scientific knowledge also has a strong correlation with the breadth of their understanding of the

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<sup>13</sup> As indicated by one respondent from a news agency in that country, and echoed by a scientist from a national research institution.

issue, although the leadership influence of some countries and institutions may have a confounding effect.

### ***Linking back to the technology***

The scope of issue framing within the technology arena also influences how policy convergence is framed. Schattschneider (1960) discusses policy entrepreneurs engaging in 'venue shopping', i.e. searching for arenas from which to frame policy problems, and that the policy entrepreneurs may themselves 'limit the venues in which they set their feet'. Different actors may seek access to different types of venues (Pralle, 2003), and this illuminates how public problems are a result successful imposition of problem definitions by one group on others (Hajer, 1995). In the SADC region, for many policy actors, biosafety is about safe application/use of products of modern biotechnology, while to others, it is about ensuring safety of all 'biological' products (Kelemu et al, 2003). Science and scientific knowledge are key venues in both cases, but the extent to which these are explored and incorporated in the science-policy nexus differs because of the different levels of focus on the science. These different framings result in what Schattschneider referred to as issues being 'organized into or out' of politics. In the final analysis, this has a bearing on both the process-based and the output-based accounts of convergence.

### **Analysis and interpretation of the emerging understandings**

This issue of cross-national policy convergence, looking specifically at biosafety in the SADC region, locks into a number of practical and theoretical perspectives around convergence. These include international relations, organizational and institutional theories, coordination theories (for example the game theory model) and systems theory, amongst many others. This essentially reflects the broad, all-encompassing and integrative nature of biotechnology/biosafety issues, and the various forces at play in the social construction of public problems. However, this analysis has narrowed down to a few perspectives given the main force behind these multiple understandings, i.e. the movement of actors within the policy arena. The understandings are also being influenced by the issue of resources, and the expectations of resource inflows as well as speedy implementation of activities which are stimulated by how the issue is framed.

One issue that seems to emerge on the ground as a result of these multiple understandings is the proverbial 'too many cooks ... spoiling the broth'. This manifests itself in a number of ways, for example, some aspects within the full integrative range of issues around biosafety are left unattended as actors jostle to occupy arenas that attract funding, and from which they can easily make an impact. This is why, for example, many organizations tend to occupy the information dissemination arena where it is easier to leave a mark. Concurrently, the same organisations will be looking around and believing that someone among the many players will take up the remaining issues. A number of gaps also exist within both the vertical and horizontal dimensions of the issue (Shaffer and Pollack, 2004). Often this is not because the information or other attributes to fill those gaps are not there, but because of a lack of obligation among the various players to take forward what the player at the other level (lower or higher) has done. This issue is best explained within the social arena of problems (cf Hilgartner and Bosk, 1998), where multiple perspectives may not overlap enough to cover the issue area adequately.

While talking about the teaching of the so-called new and 'authentic science' (as opposed to traditional science), Roth (2001) alludes to processes of enculturation that may lead to the acquisition of conceptual blind spots and prejudices as a result of trying to get students 'to do the real stuff'. The desire to want to 'move with the time' with respect to issues within the discourse on a given issue sometimes leads to an exclusion of other key considerations, leading to poor delivery at the end of the day. Ray Dart<sup>14</sup> (2006) also talks about such blind spots in the non-profit strategy process, where emphasis is placed on organizational and programme strategy, leaving out change models and intervention strategies. It is crucial that when the different understandings of convergence are brought together, such blind spots are minimized.

The public arenas model on the rise and fall of social problems (Hilgartner and Bosk, 1998) looks at the issue of stakeholders 'jumping' from one policy domain to another, and also how dramatization is crucial in getting a policy issue to attract the necessary attention in the midst of competing interests. These perspectives are crucial in explaining and understanding what is happening in the issue at hand, and in devising an appropriate way forward. In this case the particular challenge is on how the issues come together at regional level, bearing in mind that the dynamics are different from those at national level. There is problem amplification beyond predictable levels. Issue novelty and policy arena saturation dynamics also vary as different jurisdictions are brought together. This inevitably leads to different understandings of the issue at hand. The public arenas model of looking at the rise and fall of social problems can thus provide useful insights in the dynamics of framing the biosafety policy convergence problem. One of the key questions therefore remains how one dramatizes an issue which is at different agenda levels in space and time, ensuring consistency of meaning at the different levels.

There is also a wave of expectations created around the different issue framings. A combination of the framings and the new technology creates an even higher sense of expectation amongst the intended beneficiaries of the planned interventions. Expectations play a crucial role in resource mobilization and galvanizing actor groups (Borup et al, 2006). It is therefore important that these different understandings, and the expectations they elicit among stakeholders are understood, so that the envisaged purpose of bridging or mediating across different actor boundaries and levels can be better managed. It is also important to note that some kind of a prisoner's dilemma exists amongst the different stakeholders and the interpretations that they hold. Stakeholders are not sure what impact their independent pursuit of self-interest (i.e. their framing of the issue and the attendant implementation mechanisms) will have on the bigger policy community of which they are only a part. As a result, actor communities may find themselves undecided on what route to take given the various and fluctuating forces surrounding the issue. Consultation among the different stakeholders and feedback on their interpretations of the policy process are therefore crucial in building synergies.

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## Conclusions

This paper has highlighted that what may appear to be mere differences in semantics, or different expressions of the same desire, may in the long run have telling impacts on how 'visions' or 'imaginings' can be translated into tangible outputs at the policy level. In the final analysis, therefore the challenge is to try and understand the ways in which these fragmented perspectives may eventually come together towards the envisaged collective action. In other words, is it possible for convergence to occur in the backdrop of multiple understandings of convergence? This has an implication on how the convergence can be achieved, and how sustainable the converged systems will be. Do the different understandings at some stage have to pave way for a consensus position?

Social constructivists have shown that 'various actors are likely to hold different perceptions of what the problem really is'. However, as Hajer (1995: 44) alludes to in an analysis of discourse around environmental dilemmas, it is important to 'understand why a particular understanding of the environmental problem at some point gains dominance and is seen as authoritative, while other understandings are discredited'. While this paper has presented and analysed the different ways in which the biotechnology policy convergence problem is presented, and the emergence of social coalitions around specific understandings, the issue of how coherence emerges from these differences is the subject of further analysis within the bigger research on cross-national convergence of biosafety systems in the SADC. The social-constructivist rejection of the single problem-single answer model (Hajer, 1995:43) will form the basis of the further analysis on how the various perceptions then come together.

Knowledge of the different understandings of convergence is crucial, not for the sake of eliminating differences between these understandings, but in order to present evidence of the existing realities to the policy making process. The prevailing understandings of policy convergence in biotechnology or biosafety in the SADC region hinge on a number of issues ranging from institutional missions and mandates, institutional and individual capacity issues, resource-related issues, and the ever-present challenge of legitimacy which faces institutions, processes and programmes. This discussion has looked at how these issues are at play in the SADC region, and how it is in the best interests of both policy actors and researchers to understand the context as a way towards ensuring a better link between research and policy.

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