

# Appropriate Governance of the Life Sciences - 7

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## Interrogating the feasibility of cross-national cooperation in technology governance: the case of biosafety in southern Africa

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*This policy brief is one of a series describing Innogen's research on strategic innovation issues in life sciences, the governance and regulation of innovation and the resulting innovation trajectories determining which products are developed and which companies take the lead in developing them.*

**Contested benefits and risks of modern biotechnologies**

### Introduction

Biotechnology, defined<sup>1</sup> broadly as the use of living organisms or parts thereof in the production of goods and services, has revolutionised many human endeavours that rely on biological processes. Activities in agriculture, health, environment and industry have experienced many changes as a result of developments in biotechnology. These developments have brought together advances in disciplines such as engineering, chemistry and biology, to hasten processes, and to enable the development of processes and products that were not imaginable before the advent of these technologies. However, like elsewhere in the world, African countries have engaged in the debate on the pros and cons of modern biotechnologies and products for a greater part of the last two decades. For countries of the Southern African Development Community (SADC) region<sup>2</sup>, the debate changed irreversibly and fundamentally in content and nature as a result of the challenges spawned by the food emergency of 2002/2003, which brought countries face-to-face with decision-making in the face of regulatory uncertainty and a humanitarian crisis. While southern African countries have found themselves in the throes of food emergencies before, the 2002/2003 crisis had the additional challenge that the thousands of tonnes of food available to help cover the shortages were suspected to contain unspecified amounts of genetically modified (GM) maize. The dilemma laid bare the limited preparedness of countries, and the region to deal with these challenges, belying the many years of individual and collective efforts to develop and implement effective regulatory systems. This gave new impetus to efforts towards development of regulatory regimes at both national and cross-national levels.

**Collective action: an imperative?**

### Cross-national convergence of regulatory systems

This Policy Brief is based on a study<sup>3</sup> which analysed the existing and new impetus for cross-national regulatory systems for modern biotechnology sparked in southern Africa by the 2002/03 food aid crisis. The study examined the roles of three supranational organisations, the African Union (AU), the New Partnership for Africa's Development (NEPAD) and the Southern African Development Community (SADC), who, together with other regional and international bodies have initiated processes to assist the 15-country SADC region towards cross-national similarity or convergence of biosafety systems. The case study research was guided by the three factor conceptualisation of Per Olof Busch

<sup>1</sup> See Convention on Biological Diversity ([www.cbd.int](http://www.cbd.int))

<sup>2</sup> The 15 countries making up SADC are: Angola, Botswana, DR Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe

<sup>3</sup> Mugwagwa, J T (2008). *Supranational organizations and cross-national policy convergence: the case of biosafety in southern Africa*. PhD Thesis, The Open University, UK

and Helge Jorgens (2005)<sup>4</sup>, which proposes cooperative harmonisation of domestic practices, interdependent but uncoordinated diffusion and coercive imposition of policy practices as three distinct international mechanisms causing policy change and policy convergence. The study was focused on how policy innovations spread across individual countries and a group of countries with the facilitation of supranational organisations. A number of researchers have demonstrated that causes of domestic policy change do not come from national sources only, but they also quickly indicate that these causes are also not limited to isolated responses to global pressures either.

Theoretical perspectives, data gathering and analysis approaches for this study adopted an interdisciplinary and holistic approach in navigating the complex technological, regulatory and socio-political settings. Data was collected primarily using questionnaires, semi-structured interviews and document review throughout the study period, and *in-situ* observation of processes and organisational interactions during a three-month internship at NEPAD in the middle of 2007.

### **Need for collective action**

International relations scholars agree that an increasing number of problems cannot be solved unilaterally by national governments, for reasons that range from increased governmental responsibility in domestic affairs to the increase of collective problems attributable to globalisation and scientific progress. There has also been an 'erosion of the long-familiar building blocks of the political world' (Ohmae, 1995:7)<sup>5</sup>, and countries increasingly find themselves having to cooperate with others in dealing with collective dilemmas that transcend national boundaries. For developing countries, the area of regulation of modern biotechnology is one challenge largely viewed as warranting such collective action because of inherent country deficiencies, e.g. weak technical and decision-making capacities. However, cross-country cooperation is not an easy undertaking. The conditions under which this cooperation is possible are thus the subject of intense research in public policy, international relations and allied areas.

Coordination of policy at international level is complicated by many factors, starting with the ambiguity and disagreement about definitions of 'policy'; which means different things to different people. Policy-making occurs in a world undergoing continuous change, with older institutions and governance systems breaking up, and new ones emerging. In most democracies, policies are essentially a result of multistakeholder processes, encompassing different sectoral and societal interests. Yet, the policy environment is recognised as one of the key arenas that have to be thought about and acted upon if countries are to benefit from any innovation or investment in research. Countries of the SADC region have thus been making individual and joint efforts to develop and maintain a conducive policy environment with a balance between the risks and benefits of biotechnology. However, the biotechnology policy arena is highly contentious and has stagnated in many contexts as newer forms of modern biotechnologies emerge. Moreover new technologies do not evolve on a blank canvass. Players have different prior beliefs and positions. For example, the issues of biosafety and cross-national convergence of biosafety systems are enmeshed within the political economy of GM food, especially the often conflicting objectives between trade and environment management obligations and this complicates the numerous dynamics at play. Another of the many challenges around the technology is that it is dominated by a diminishing number of industrial giants. The vulnerability of most developing countries in the face of these powerful corporate actors and states is both a cause for worry, and a source of motivation for the cross-national technology governance agenda, creating both the background and foreground for research studies. Biotechnology is not only a dynamic scientific discipline, but it is also a game of high stakes and changing targets linked to poverty, polarisation among interest groups and that make it hard for

### ***New impetus towards cross national cooperation***

<sup>4</sup> Busch, P-O. and Jorgens, H. (2005). The international sources of policy convergence: explaining the spread of environmental policy innovations. *Journal of European Public Policy*, vol. 12, no. 5, pp. 860 – 884.

<sup>5</sup> Ohmae, K. (1995). *The end of the nation state: The rise of regional economies*, Simon and Schuster Inc, New York, London, Toronto, Sydney, Singapore.

developing countries to develop adequate capacity levels to maximise the benefits and minimise the risks of the technology. The challenges at national level are understandably magnified when the issues play out at regional level.

### **Interplay between mechanisms**

The three different mechanisms acted on different levels of the biosafety systems, and looking specifically at policies, and further splitting this into policy processes, policy outputs and policy outcomes, various impact levels could be detected. The impact was dependent to a large extent on the regional context and on the realities around the organisations with respect to their regulatory status, resource-endowment, and political clout. The mechanism that had the biggest influence on the national policies also depended on the lack of regulatory influence on the part of the three SNOs, and the subservience of biotechnology issues to other policy agendas. Furthermore, the dominance of external sources of funding and expertise also meant that the 'regulatory hand' of the three organisations and other multi-state processes on the continent was limited. The fact that institutionalisms around biotechnology and biosafety were only still developing weakened the organisations in terms of stamping their influence because there was still a lot of fluctuation around the organisations themselves. This was also manifested in the many and different initiatives and the 'start-stop approach' to policy processes.

*Many factors affecting mechanisms at play*

One of the main determinants of the nature of mechanism in operation is the identity and composition of policy players within the given policy context. The SADC region is congested with different players. In most cases these players include those who have been part of the development of the systems being targeted for change by the new policy agendas, and they introduce a resistance dimension to the processes. Those influencing policy include elected officials, bureaucrats/civil servants and pressure groups. Policy entrepreneurs/experts also play an important role within the policy arena in the region, and these come in the form of prominent individuals, think tanks and consultants. They flag knowledge legitimacy in their dealings, while other groups, for example elected officials bring political legitimacy, and bureaucrats/civil servants bring procedural legitimacy through their knowledge of how to assimilate and domesticate policy lessons in the national systems. These different legitimacy and influence levels have a bearing on the possible mechanisms in operation for example through constraining or facilitating the knowledge that the policy actors could access and in turn be able to pass on.

*Resistance to spread of policy innovations*

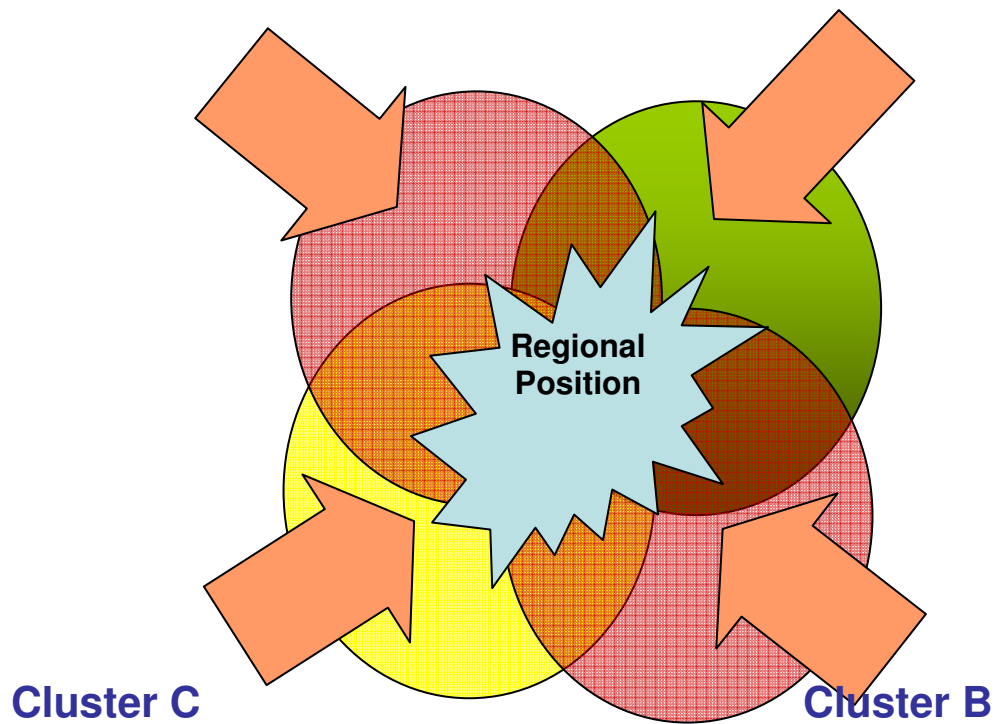
### **Multi-layered convergence**

From the daunting contextual realities highlighted above and throughout the study, it is clear that for biosafety systems in the SADC region, achieving and implementing a cross-national framework where all countries face the same obligations would not only be difficult, but would spawn divisive tensions at other levels. Countries that are well advanced in the technology and regulatory systems indicated their unwillingness to climb down to a regional framework which might not best serve their interests, while lagging countries indicated the increased challenge they would face in trying to maintain their obligations at domestic and regional levels. The stumbling blocks of national interests, the perceived existence of a technological hegemony and the different institutional capacities at national level were part of the context that the regional framework would have to deal with, in addition to other numerous and fluctuating realities. A '**multi-layered convergence**' therefore seems the most feasible option, where countries occupy different positions with respect to the ideal 'converged position'. Figure 1, below is one variant of several possible schematic representations of this type of convergence.

*Interests and policy pressures vary across countries*

**Cluster D**

**Cluster A**



**Room for new multiple convergence loci**

*Fig 1. Schematic presentation of proposed multi-layered convergence*

The layers or clusters above would group countries, for example, according to level of development and use of the technology and regulatory system, and would mean different obligations on the part of the countries vis-à-vis demands from the regional position. This layering would not be without problems, however, as some countries were seen to want to collaborate or partner with those that were more advanced than them, but it would deal with fears of hegemony or domination by others, making 'cooperation from contribution' and 'owning of regulatory processes' more feasible. The different positions would also be useful as benchmarks to measure progress of different countries in the development of their systems with regard to their regional partners. Meanwhile, apart from layering based on status of entire regulatory systems, layering could also be issue-specific; for instance, following the example of EU regulations and directives on pertinent aspects related to development and release of GMOs [e.g. labelling, product release, risk assessment and so on]). This approach would resonate with what some respondents noted as the need to focus on 'key and urgent matters' given the pressures governments face from other policy arenas.

**Need to recognise role of both state and non-state actors**

Focusing on sub-national sectors (e.g. agriculture, environment or science and technology ministries) as convergence targets would also be another type of layering, and respondents indicated there is greater feasibility of these converging within and among themselves, particularly at in-country level. Cross-national convergence of practices within these national sectors would be easier if the assumption of 'less heterogeneity among policy functionaries in corresponding sectors' can be upheld. Facilitation of the cross-national learning by the SNOs, especially through their sector-specific programmes, could increase the feasibility of this approach.

This study focused more on the process of attaining convergence, and less on the outcomes of the process. The feasibility of these various options presented here therefore begs further analysis from both theoretical and empirical perspectives.

Social science research in the ESRC Genomics Network (EGN) interprets the field of genomics broadly, including plant, animal and health related innovations in life sciences. The Network ranges across five of the UK's leading universities, and involves over a hundred researchers, administrative and support staff, and international visiting research fellows. It is one of the largest social science investments in the ESRC's current portfolio, and is becoming the largest concentration of social scientific research on life sciences in the world.

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