Third Generation Governance

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Introduction

Governments, businesses, and civil society face problems that can persist for many years, despite the numerous efforts to remedy them. These wicked or complex problems are also numerous in the area of life sciences. A few examples: depletion of fish stocks, degradation of biodiversity, bird flue; human induced climate change, water flooding, poverty, unsustainable agriculture or food safety. The complexity is generally caused by uncertainty, by the involvement of many interdependent actors with conflicting interests (not only disagreeing with the solutions given, but also with the very nature of the problem), by the dynamics of the problem (today's solution is tomorrow's problem) and by the connection of problems at different scales.

Despite these complexities, civil society expects a lot from their 'Government' in solving these problems. And, despite of the same complexities, the Government is ambitious to *really solve* these problems. But what possibilities do governments have to intervene in society? And what is the effect of the dependency of governments on companies and citizens, who have considerable resources at their disposal; who pursue own goals and who try to influence society themselves? And, how effective are governments if problems cross the borders of administrative units like municipalities or even states? For example, in 2006, a brown bear released in Italy, as part of a policy of reintroducing wild life, wandered across the border to Germany and began to kill sheep. As efforts to capture the bear alive failed it was eventually shot by government marksmen. This is a small story but also fisheries, infectious diseases or greenhouse gases cross borders.

I believe that these questions are the current challenges. They touch theories on governmental steering and policy instruments. At Wageningen University we focus on complex problems at the interface of nature, technology, society and policy. Scaling and governance is one of our strategic research programs. Our research not only aims at understanding complexities and policy failures but also at developing new theories about governmental steering and the design of innovative policy arrangements.

Today I present three generations of governance. Although these generations also reflect different ideological mindsets I leave untouched the lingering political struggles behind the selection of policy arrangements. Also I won't discus agenda setting and problem defining. I will address the role of science. 'On science and

governance' is the theme of this symposium. I will argue that every generation has its own science–policy interface.

First generation governance
The first generation governance is characterised by an instrumental perspective. It focuses on the tools of government. The basic assumption is that policies or governmental steering always involve attempts to change people's behaviour. The dominant train of thought is that societal problems can only be solved if people change their behaviour. Questions are: what is the range of policy instruments available to government, how do the characteristics of instruments influence the outcome of a policy and above all, how to choose the right instrument? To answer these questions typologies of instruments have been developed. The most well-known but very general one is the distinction between carrots, sticks and sermons. Other taxonomies are legislative, communicative and economic instruments; or instruments encouraging behaviour or constraining behaviour.

Within this first generation the role of science is an instrumental one. To put it a little oversimplified: the role of science is counting. Developing and implementing policy instruments is impossible without categorization, quantification, identification and monitoring. By one way or another society must be remade before it can be the object of governmental steering. For example subsidising nature development needs knowledge about species, hectares, influencing factors amongst others. Scientific experts deliver data and provide information to serve policy. For some of them a hard job as the necessary simplifications needed by bureaucrats can never adequately represent the actual natural and social processes. Scientists and policy makers operate in separate worlds, except some business-wise communication.

In some situations first generation instruments will have positive effects, but this approach is also criticised. Major limitations are: 1) the great amount of adequate and detailed information needed to develop and implement these instruments; 2) compliance of instruments proves to be very difficult in the case of contested norms; 3) the self referential character of many actors and the relative unawareness of signals from their environments; 4) the lack of scalability, as many instruments cannot vary in intensity resulting in bureaucratic overkill and 5) the human ability of reflexivity and learning. Firms and citizens will use their learning capacity to increasingly avoid disagreeable effects of policy. As a consequence policymakers learn resulting in accumulation of policies and control and in the long run causing unintended and undesired side-effects or even societal damage. The door and window tax in France (described by James Scott), is an old and striking case on this point. In the 19th century, France started to collect taxes on immovable properties. Bureaucrats had reasoned that the number of windows and doors in a house was proportional for the dwelling, so they did not need to enter the house. A brilliant idea but not without consequences. Inhabitants were learning and renovated their dwellings with the formula in mind so as to have as few openings as possible. The long term effects on the health of the rural population lasted for more than a century.

Second generation governance
The second generation governance can be seen as a reaction on the limitations of this first generation. The confrontation with lack of information, problematic compliance, self-referentiality, lack of scalability and reflexivity challenge both governance

practice as governance theory. Second generation instruments are instruments that better fit to the dynamic characteristics of society. Just as the first generation, second generation instruments depart from the paradigm of a government steering societal developments. The main difference is that these instruments are more advanced and provide more room for negotiating. The attention shifts from single instruments to instrumental mixtures or policy arrangements. Beside instruments directly influencing actors indirect instruments are also being developed. Indirect instruments are not aiming at influencing the behaviour of an actor directly but by means of other actors. So governmental actors can try to influence consumers or employees, in the hope that they will be further able to guide the behaviour of a firm. Governments can also treat with regulation in the hope group of firms or citizen solve the problems themselves. Another strategy is changing the institutional context or the interdependencies in a network. Examples are the introduction of tradable pollution rights, organizing alliances or subsidizing NGO's .

Concerning second generation governance the role of science is somehow paradoxical. On the one hand science that departs from fixed realities and certainties is no longer thought to be suitable but at the other hand science is (still) expected to have a role in reducing social and natural complexity to manageable proportions. To deal with this paradox scientific activities must vary according to the extent of uncertainties and system dynamics. The worlds of scientist and politics got intermingled. It's up to scientist to intervene when negotiated knowledge becomes negotiated nonsense.

Third generation governance
Finally I will introduce the first notions of what we call third generation governance. It starts with critically scrutinising assumption underlying the first and second generations. The main points of critics are: 1) the damaging effect of many policy instruments on adaptive structures and practical improvisation capacities of both social and natural systems (local knowledge of preserving natural resources is replaced by control and command); 2) the risk of moral hazard, which arises as feed back mechanisms are blocked and actors do not bear the full consequences of their actions, and therefore act with less caution than they otherwise would (due to high dikes people no longer prepare themselves for flood risks). 3) Temporal mismatch. As natural and social systems are always changing, policy interventions are always reactive and can set in motion a series of impacts that can entail unknown, unintended and undesired effects later on. The problem is the irreversible character of the policy system itself in which policy makers (if we are lucky) learn only years later that the policy was indeed a mistake (the Dutch education system).

Third generation governance provides a much more modest view on governmental steering. It does not depart from the idea of a government who knows what kind of behaviour is required from people and believes it can control that behaviour using intelligent instruments from the outside. A more suitable form of governance fits in with the emergent processes of change in social and natural systems. It's about taking small steps, standing back, observing and then planning the next small moves. It's connected with concepts like resilience, adaptive management or self-organisation.

Instead of ready made taxonomies of instruments third generation governance provides some rules of thumb. A first rule stresses the importance of continuous observations and creating awareness of existing adaptive structures. It is a difficult job

for many policymakers as they are used to see problems and pretexts for governmental interventions. In order to develop suitable policy arrangements the following basic conditions are guiding: 1) Provide a general direction; 2) Animate people and get them moving and generating experiments that uncover opportunities and allow the largest accommodation for the unforeseen; 3) Encourage updating through improved situational awareness and closer attention to what is really happening. 4) Facilitate respectful interactions in which people listen, speak up and maintain self-respect while dealing with different interpretations.

I give you an example (described by Michel van Eeten). It's situated in California where large-scale water work organisations seek to secure requirements for water supply, water quality, flood control and hydropower generation, as well as those for the protection of endangered species and other ecological mandates. While these organisations had launched massive multi-stakeholder planning efforts to reconcile the competing claims the real innovations were found around the operational processes. Control rooms are the heart of the water and power system where an array of screens represent the system in real-time and where operations are scheduled and executed together. These control rooms were managed by teams consisting not only of the service provider operating the control room, such as the Department of Water Resources and the Army Corps of Engineers, but also representatives of the state and federal fish and wildlife agencies and other environmental units. Ecologists performed a role as "interpreter" between the global policy directives and the real in time decisions (they help make the connections about where the fish are and what they need). In this example all four conditions are met: a global direction, animation, updating and respectful interaction.

Scientists act in different arenas, fulfilling different jobs. In the world of science, new theories and models are developed to improve our understanding of complex dynamic natural and social systems and the relations between them. In the world of politics policymakers do their job. An interesting point of third generation governance is the emergence of a new arena, situated in between politics and science. Processes in this new arenas are characterised by tailor-made activities, trans-disciplinarity, intensive interactions between policymakers and scientists and continuous sense-making. At a small scale the processes in the control room provide a good example.

Conclusion
In this address I have given a broad overview of three generations of governance. Finally there is always the question of right and wrong. I think it's time to move beyond simple dichotomies. Of course I realise that by using the term of generations I seem to disqualify the first generation and to prefer the third. In my opinion third generation governance may be very suited to complex dynamic situations but it is only meaningful if there is a willingness and opportunity to adapt, to experiment, to develop and to learn. This is not the case in all situations. In the case of stagnations using first or second generations is inevitable. Also when problem situations are less complex and more predictable first or second generations are sufficient. However also in these situations I believe that governmental actors who take more notice of emergent change and its effects can be more selective with new policy and new regulations.