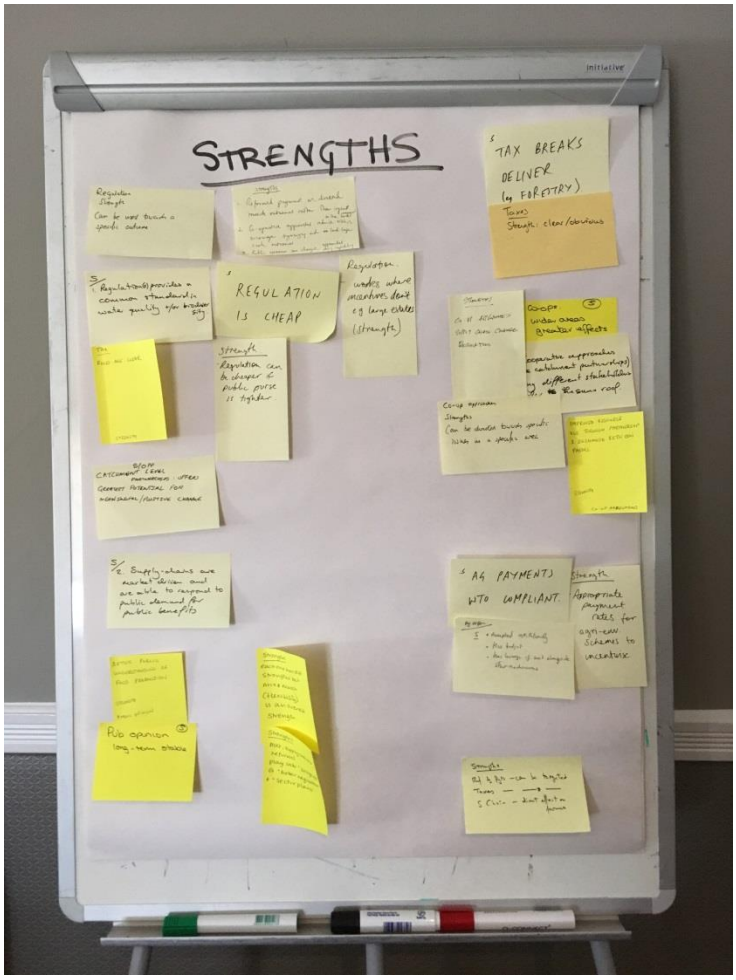
Strengths and weaknesses of governance mechanisms – workshop report

21st February 2018, Aberdeen



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Summary

This report summarizes the findings of the fourth workshop held in February 2018 as part of the project 'PROVIDE' (PROVIding smart DElivery of public goods by EU agriculture and forestry www.provide-project.eu/).

The workshop focused on evaluating the advantages and disadvantages of different governance mechanisms which can be used to improve the delivery of public goods from agriculture in north-east Aberdeenshire and the reduction of public bads. The first part of the workshop consisted of a presentation followed by discussion of the results of participatory modelling the project team had conducted with experts and local stakeholders to depict how they perceived the potential effects of governance mechanisms on biodiversity and water quality. None of the models predicted very large changes in water quality or biodiversity and this was the focus of most of the discussion as it ran contrary to the expectations and experiences of the participants. Participants also discussed the limited transferability of the results of this kind of modelling to other areas or systems. The next part of the workshop consisted of a presentation and discussion of the PEGASUS project (http://pegasus.ieep.eu/), which had been looking at similar issues to the PROVIDE project.

In the third part of the workshop, participants conducted a SWOT analysis identifying strengths, weaknesses, opportunities/enabling factors and threats/barriers to a suite of governance mechanisms which had been identified at previous workshops as potential mechanisms to improve biodiversity and water quality. These mechanisms included Reformed agricultural payments (agri-environmental schemes, land-based subsidies), Market mechanisms (e.g. PES), Taxes, Regulation, Public opinion (changed narratives, branding/ labelling, awareness), Change in supply-chains (shortening chains, provide alternatives, inputs as well as outputs), and collaborative approaches (e.g. catchment partnerships). The three most important factors in each of the SWOT categories together with criteria of good governance (identified in a previous workshop) were then used in a multi-criteria analysis focusing on two of the governance mechanisms (agri-environmental schemes and collaborative approaches). These chosen strengths consisted of being able to promote specific,

outcomes/targets, being able to set common standard, and being enforceable. The chosen weaknesses consisted of implementation being impacted by political will, different actors have different priorities, and not being targeted. Opportunities were being able to impact wider areas, Brexit, and the ability to influence land ownership. Threats were the poor financial robustness of the agricultural sector, potential detrimental effects on environment and disconnect between payments and delivery. The good governance criteria were being targeted to the topic, having low ancillary, producing ancillary benefits, measurability, effectiveness and acceptance.

Of the factors considered in the multi-criteria analysis, the ones with the highest average score in relation to their importance were enforceability, effectiveness and being targeted to the topic. These factors also had the lowest variation in scores, indicating general agreement among participants. Largest variation in importance scores was seen for the opportunity provided by Brexit, and the ability of mechanisms to influence land ownership. In most cases, the average scores for agri-environmental schemes were seen to perform better in relation to the criteria than collaborative approaches. The variation in scores was also lower across mechanisms for agri-environment schemes. The only exceptions were in relation to being targeted, having fewer negative side effects (ancillary costs) and more positive side effects (ancillary benefits) where collaborative

approaches were rated higher on average compared to agri-environmental schemes, and had less variations between respondents. Discussions in this part of the workshop focused on the need for more integrated approaches, both in relation to the ways in which different governance mechanisms interact with each other, and in relation to tackling multiple issues and focusing on the landscape scale. Other points raised included the need for more experimental approaches and to be less risk averse in this regard, and the need for in-built monitoring in order to be able to adjust schemes and enable co-learning.

Dr. Chris Short giving a presentation on the PEGASUS project

1. Introduction

This report presents a summary of a workshop held in Aberdeen, in February 2018 on the strengths and weaknesses of governance mechanisms aiming to improve the delivery of public goods and reducing the production of public bads. The workshop was organised by researchers from the James Hutton Institute and was the fourth in a series of workshops as part of a wider EU project called PROVIde (PROVIding smart DElivery of public goods by EU agriculture and forestry www.provide-project.eu/). The project seeks to identify better ways to ensure the provision of public goods from agriculture and forestry. Similar workshops were held in the other project partner countries[1]. Representatives from agriculture, forestry, public agencies, research and local interest groups across Aberdeenshire, in north-east Scotland, were invited to take part in the workshop and 12 participants took part in this workshop. In two previous workshops participants discussed what we mean by 'public goods' (and bads), where in the region these can be found, what problems exist in relation to ensuring the continued delivery of these goods (and the prevention or reduction of public bads), what factors influence the supply of public goods, and what governance mechanisms can be used to promote their production.

In this fourth workshop, the focus was on discussing the results from modelling the impacts of governance mechanisms on public goods from agriculture, and discussing in more depth the strengths and weaknesses of different governance mechanisms that can be used to influence the delivery of public goods.

2. Workshop outline

The workshop began with a general introductory round of the participants and a summary of the purpose and the work carried out as part of the PROVIDE project so far. This focused especially on the work carried out in the interim between the third regional workshop (held in April 2017) and this fourth workshop. During this period the partners in the PROVIDE project had focused on modelling the impacts of governance mechanisms on the provision of public goods and bads (see box 1 for a more detailed description of the modelling carried out in Scotland). Each project partner had focused on the issues, hotspot areas and governance mechanisms relevant to the delivery of public goods and bads from agriculture and forestry in their region. The issues, areas and mechanisms had been identified by the participants in the round of previous workshops.

[1] The following countries are represented in the project: partner countries include: Austria, Bulgaria, the Czech Republic, Estonia, Finland, France, Germany, Italy, the Netherlands, Poland, Romania, Spain, and the UK.

Box 1: Modelling work

In Aberdeenshire, earlier workshops had pointed out two areas where issues of public goods and bads could be interesting to investigate further. One was the Upper Deeside where different land uses such as recreation, forestry, shooting and conservation can at times create conflicts, and where there have been problems with flooding in recent years. The other was the Ugie region where relatively intensive agriculture has been linked to problems with water quality and biodiversity while at the same time contributing to rural vitality and food supplies. As the issues in the Upper Deeside are less clearly linked to agriculture and forestry, the subsequent work in Scotland focused on the Ugie area.

For the modelling, we chose an approach called 'fuzzy cognitive mapping' which is a semi-quantitative modelling approach. Fuzzy cognitive mapping consists of first identifying the elements driving a system and then identifying how these elements influence each other, including specifying the direction and strength of the influence using relative numbers (e.g. -1 to +1). The model can then be run in a series of iterative steps to learn about the behaviour and trajectory of the system. The strengths of the influences as well as the outcomes in terms of changes in the factors in the system are given in relative values only. The method is therefore not suited to predict outcomes in terms of absolute values. Advantages of the method include that feedback loops can be included and that qualitative information and expert knowledge can be used as input in the creation and validation of the model.

We created separate models for biodiversity and water with two groups of stakeholders: experts (other researchers at the James Hutton Institute with expertise in water, biodiversity and governance) and local stakeholders (mainly farmers). To build the models, we provided the participants some of the elements in the form of governance mechanisms. For water, the suite of selected governance consisted of green subsidies, catchment partnerships, environmental regulation, education & extension services (for both the general public as well as farmers), public pressure and green labelling. For biodiversity, the following governance mechanisms were included: Greening of the Common Agricultural Policy, change in agricultural supply chains, promotion of traditional crops, environmental regulation, green labelling, change in narratives about agriculture. For both models we also included land based agricultural subsidies, farming practices and the following public goods as additional elements in the system: biodiversity, water quality, normal water quantity/flow, and food security. The participants were then asked to indicate which of these elements were linked and in what way (i.e. the direction of the influence, whether it was positive or negative and how strong it was (measured on a relative scale from +1 to -1)). Throughout, the participants could add or modify elements in the system as well as leaving out any elements which they regarded as not relevant or difficult to include, and discussed why they thought particular elements in the system were linked in particular ways.

After constructing basic models for biodiversity and water, the participants were presented with three future scenarios of change including factors such as climate change, technological progress, consumption patterns, market volatility and prices, and were asked to include these factors in the models as well. After constructing the model with the participants, outcomes of changes in the governance factors (and later on the scenario factors) were explored by setting individual governance mechanisms to 1, to indicate high levels (or effectiveness) of this mechanism. This was also carried out for combinations of governance mechanisms. The models were also run with no changes.

(Box 1 continued)

The relative differences between fixing governance mechanisms when compared to the base model was small, however when compared to removing the governance mechanisms from the model (setting to 0), larger differences can be observed. This comparison enabled us to observe the differences between weakened governance mechanisms and strengthened governance mechanisms. As expected, the differences in outcome between these two model runs were larger than when compared to the 'no change' model run. In all cases the biggest changes in outcomes were primarily in relation to agricultural practices, which had been included as intermediate step between governance mechanisms and the public good outcomes. While this may 'dilute' the outcomes in terms of impacts on public goods, it seems to be a more realistic representation of the pathway of influence enabling some control for the impact of other factors on agricultural practises.

We investigated the effects of individual governance mechanisms as well as packaging similar mechanisms together. Though differences were small overall, some mechanisms were predicted to have larger impacts than others. In the biodiversity models technological change was predicted to have largest impacts on biodiversity, predicting impacts of 4% compared to less than 1% for more effective governance (agri-environment schemes and CAP) or altered farming (increased traditional crops and reduced supply chains). In the water models largest changes were predicted for more effective governance (increase agricultural regulations and subsidies). The overall small magnitude of impacts seems to indicate that an array of different governance mechanisms are needed in order to promote the delivery of the different public and private goods which stakeholders find important, as well as investigating alternative barriers to public good provision.

After the modelling work had been presented participants provided questions and comments on this part of the work. This was followed by a presentation by Dr. Chris Short on the PEGASUS project (http://pegasus.ieep.eu/), which has been funded under the same funding call as the PROVIDE project and has been looking at similar topics in England and Wales. This was again followed by discussion and questions.

After these presentations, the first workshop exercise consisted of conducting a SWOT analysis for the mix of governance mechanisms previously identified as relevant for issues with biodiversity and water quality in relatively intensive agricultural systems in north-east Scotland. As there was a large degree of overlap between the governance mechanisms identified for water and biodiversity, we did not distinguish between the two issues for this exercise. Participants were asked to write perceived strengths, weaknesses, opportunities/enabling factors and threats/barriers that they thought were likely to influence the performance of the governance mechanisms on post-its. This was followed by a discussion. After the participants had written these down, the facilitators placed the post-its on separate flip charts (one for strengths, one for weaknesses, one for opportunities/enabling factors, and one for threats/barriers). The participants were then each given 12 sticky dots and asked to place these on the three most important factors in each category.

The second exercise of the workshop consisted of a multi-criteria analysis of the governance mechanisms. Multi-criteria analysis (also known as multi-criteria decision making or multi-criteria decision making analysis) encompasses a variety of different approaches. However, the main idea is to identify a number of criteria which are considered relevant in order to evaluate different potential options/developments, determine how important each of these criteria are and evaluate how the different options perform (or score) against these criteria. In this case, the three most important factors in each SWOT category (as indicated by the number of dots that participants had collectively allocated to them) were used as criteria to evaluate the governance mechanisms. Additional criteria for 'good governance' which had been identified in the third workshop were also included as evaluation criteria. The original idea had been to conduct the analysis for the suite of governance mechanisms taken together (based on the premise that governance mechanisms interact with each other and that final outcomes will be determined by the suite of governance mechanisms rather than any single mechanism). However, discussions during the SWOT analysis had shown that participants found it difficult to evaluate the suite of governance mechanisms taken together in a meaningful way. It was therefore decided to focus on just two of the governance mechanisms which the participants found most relevant (agri-environment schemes and cooperative approaches). This was followed by a general discussion on how governance can be improved to solve problems with water quality and biodiversity as well as public good issues more widely.

3. Workshop outcomes

3.1 Discussion of the modelling work

Following the presentation of the modelling work conducted as part of the PROVIDE project (box 1), a short discussion ensued. The main points raised in the discussions focused on areas included and not included in the models, and in the relatively small changes in outcomes that the models predicted, and which contradicted the participants experiences of some governance mechanisms resulting in quite substantial changes in biodiversity and water quality. The researchers answered that the elements included in the model had been determined by the participants in the modelling workshop, and did not cover everything. The relatively small amounts of change in the models were linked to the way the models were constructed where changes in governance were always going through changes in farming practices which then in turn influenced outcomes in public goods. While having the intermediate step of 'farming practices' in between the governance mechanisms and the outcomes in a sense reflects reality, it also means that it 'dilutes' any potential influence in what the model predicts. This was highlighted in the way that the predicted influence on farming practices was always much bigger than the predicted outcomes for public goods.

Participants also pointed out that results from this kind of modelling are specific to the particular context (in this case relatively intensive agricultural systems in north-east Aberdeenshire) and that

therefore it should not be assumed that the results can be extrapolated to other areas and situations. In addition, it was also pointed out that there is often a difference between how particular governance mechanisms are supposed to work and how they are actually implemented, which may mean that what the model predicts may not in reality take place.

3.2 SWOT analysis

In the next part of the workshop, the participants were considering the strengths, weaknesses, opportunities/enabling factors, and threats/barriers in relation to a package of governance mechanisms which had been identified in earlier workshops. This package consisted of mechanisms, which the participants thought could be used to improve biodiversity and water quality. Initially, separate lists of mechanisms had been produced for biodiversity and water quality. However, as there was a lot of overlap between the two lists, for this workshop only one joint list was considered for the SWOT analysis.

The list consisted of the following mechanisms: Reformed agricultural payments (agri-environmental schemes, land-based subsidies), Market mechanisms (e.g. PES), Taxes, Regulation, Public opinion (changed narratives, branding/ labelling, awareness), Change in supply-chains (shortening chains, provide alternatives, inputs as well as outputs), and Collaborative approaches (e.g. catchment partnerships).

The participants discussed that it was very difficult to think of strengths, weaknesses, opportunities and threats for the whole package of mechanisms, and therefore mostly wrote these down in relation to individual mechanisms. In addition, the participants pointed out that it would make a difference if they did the exercise in relation to the way the system currently functions or if they did it in relation to how they thought the system could potentially function. The participants agreed that it made more sense to do the exercise in relation to how the system currently functions rather than in relation to potential as the latter might be understood differently by different participants.

After the participants had written down strengths, weaknesses, opportunities/enabling factors and threats/barriers individually on post-its, these were collected and put on large sheets of paper (one for each of the four categories of SWOT factors). The facilitators grouped similar factors together after which the participants identified which in each of the four groups of SWOT factors they thought were the most important ones.

The three most important strengths, weaknesses, opportunities/enabling factors, and threats/barriers identified by the participants are indicated in Table 1.

Table 1. Most important factors from the SWOT exercise (strengths, weaknesses, opportunities/enabling factors, threats/barriers) as well as criteria for good governance identified in previous workshops. Numbers indicate how important participants on average found these factors (on a scale from 0-10 with 0=not important at all, and 10=highly important) and how they thought that agri-environmental schemes and collaborative approaches perform against these factors (0=does not display this characteristic, 10=displays a lot of this characteristic).

Factors	Mean importance score	Mean performance rating of agri-environmental schemes	Mean performance rating of collaborative approaches
Strength: Can promote specific outcomes/targets	8.7	8.6	7.0
Strengths: Can set common standard	7.6	7.3	4.6
Strength: enforceable	9.3	6.9	4.5
Weakness: political will impacts implementation	7.7	7.7	6.3
Weakness: different actors have different priorities	5.9	6.0	6.8
Weakness: not targeted	6.0	6.2	5.4
Opportunity: can impact wider areas	7.7	6.3	6.1
Opportunity: Brexit – EU not an excuse anymore	6.5	6.2	6.1
Opportunity: can influence land ownership	4.4	3.8	3.9
Threat: poor financial robustness of the agricultural sector	8.5	7.3	7.0
Threat: can have detrimental effects on environment	7.7	4.5	5.3
Threat: disconnect btw. Payment and delivery	7.7	6.2	4.0
Good governance: Targeted to the topic	9.0	8.8	9.0
Good governance: Low ancillary costs	7.4	4.9	6.5
Good governance: Ancillary benefits	7.5	6.3	7.0
Good governance: Measurability	7.9	7.5	6.7
Good governance: Effectiveness	9.3	8.1	7.8
Good governance: Acceptance	8.1	8.1	8.0

3.3. Multi-criteria analysis

After the three most important factors in each category had been identified, the next exercise consisted of conducting a multi-criteria analysis using these factors from the SWOT analysis as well as good governance criteria (Table 1). The latter had been identified at one of the previous workshops where participants had discussed what criteria can or should be used to judge whether a given governance mechanism is good or not.

As the participants had pointed out that it was difficult to consider a whole package of different mechanisms at once, for this exercise, they chose two of the individual governance mechanisms. These were agri-environmental schemes, as these were seen as one of the main mechanisms currently in use, and collaborative approaches, which were thought to have high potential for success.

Of the factors considered in the multi-criteria analysis, the ones with the highest average score in relation to their importance were enforceability, effectiveness and being targeted to the topic. These factors also had the lowest variation in scores, indicating general agreement among participants. Largest variation in importance scores was seen for the opportunity provided by Brexit, and the ability of mechanisms to influence land ownership, with participants scoring these from 0 (not important) to 10 (highly important).

In most cases, the average scores for agri-environmental schemes were seen to perform better in relation to the criteria than collaborative approaches. The variation in scores was also lower across mechanisms for agri-environment schemes. The only exceptions were in relation to being targeted, having fewer negative side effects (ancillary costs) and more positive side effects (ancillary benefits) where collaborative approaches were rated higher on average compared to agri-environmental schemes, and had less variations between respondents. Comparing how important different criteria were on average considered to be and how the two governance mechanisms were seen to perform against these criteria, the biggest discrepancies seem to be in relation to enforceability. On average, enforceability was seen as a very important characteristic, however while agri-environmental schemes perform well in relation to being enforceable, collaborative schemes were on average seen to perform poorly in this regard. The difference in scores between collaborative approaches and agri-environmental schemes may also reflect the fact that the latter are well-known and most of the participants have direct experience with them; whilst the former (collaborative) approaches are more hypothetical and most of the participants have less experience of them.

After each participant had scored the criteria and the two governance measures (agri-environmental schemes and collaborative approaches) there was a discussion on the problems as well as potential improvements with regard to governance mechanisms.

In relation to agri-environmental schemes, the participants discussed that current approaches too often do not take into account local conditions. An example given was where farmers are paid to delay mowing grass in order to benefit ground nesting birds, but where there are large populations of badgers and foxes this will mean that birds are not successfully breeding anyway due to predation and disturbance. In order to improve populations of ground nesting birds it would therefore be necessary to look at the problem in a more holistic way. In the example given this would include regulating the population of predators, but would also mean educating the public about why this is necessary. Another suggestion was to move to more results-based mechanisms where farmers are not paid to implement particular management practices such as mowing grass at a particular time, but are paid in relation to the desired results such as more ground nesting birds. However, participants discussed that this could be difficult, partly because it is often more difficult to monitor the results (compared to monitoring the implementation of practices) and partly because it makes it more risky for the farmer to participate in the scheme. A farmer may be doing the right things but nevertheless it might not bring the desired results. It may help to combine this with more collaborative approaches and monitoring at the landscape scale rather than that of the individual

farmer so success is not measured in relation to whether for example the ground nesting birds are in an individual farmers' fields but that there are more on the landscape scale. Participants also discussed that even though governance mechanisms may work and achieve the desired results this can be undermined by extreme events such as extreme rainfall. Governance mechanisms need to be designed to acknowledge this type of risk as well.

Participants argued that governance mechanisms (not just agri-environmental schemes but all types of governance) needed to have inbuilt learning so that they can be adapted along the way to reflect what does and does not work. This does require that monitoring is included as part of all kinds of governance mechanisms. Participants thought that having designated experimental schemes would also be a good thing. Policy makers are often too risk averse in this regard. These types of schemes may not always work as intended, but if they take place on a small scale this would not necessarily mean wasting huge sums of money. Funds could, for example, be found through a reform of the current agricultural payment schemes.

Participants discussed that experimental approaches could also be used to explore more collaborative approaches which are currently not so widespread in Scotland, apart from some cases, for example in relation to water management. Collaborative approaches are good in order to bring in more soft values such as trust and respect, and stress land managers' experiences. It should also include monitoring aspect carried out by the involved parties themselves. This would help to ensure that the monitoring is actually relevant. Collaborative approaches are more commonly used in other countries such as Ireland and it would be good to learn from their experiences. However, it also necessary to take into account that the land ownership pattern in Scotland is very different from other countries with more of the land being concentrated in a small number of large holdings. In addition, it is important to remember that collaborative approaches are not inherently better than approaches aimed at individual land owners. They can work well where the issue is at landscape scale so that you need different land owners to cooperate to solve the issue. This fits with a move towards greater focus on the landscape scale nowadays. Collaborative approaches are dependent on enrolling respected, local land owners/managers who can act as leaders, and need to focus on public goods that are important to the local people especially as collaborative approaches have high transaction costs. They may therefore work better where they can address multiple issues at once or where they address one big issue that really matters at the local scale. However, at the same time these schemes require both local and political will to work, and also need to enable co-learning.

The participants also discussed that it is important to discern between different types of issues. For example, where single, non-migratory species are concerned it is relatively easy to do something as the causes can be more easily targeted. However, it is far more difficult for more complex issues such as climate change, or where external factors play a large role. For instance, migratory species where we may do all the right things here, but threats come from the practices and conditions in other countries. For these kinds of issues you would need to bring in more international instruments. It is therefore important to think about the issues of scale, at what scale different problems can be addressed and where local and national governance mechanisms are likely (or not) to have an effect. In addition, there may be trade-offs between different issues and this also needs to be taken into account. One example was the unintended increase in predator populations as an outcome of woodland planting schemes, which in turn had negative impacts on other species such as ground nesting birds.

Participants then discussed the necessity of getting away from a focus on single governance mechanisms and instead looking at how they can be combined in order to achieve the desired outcomes. For example, changing the regulation for predator species such as badgers could help to mitigate the unintended, negative outcomes of woodland planting. Participants also discussed that sometimes the threat of regulation could promote more voluntary approaches. It was thus necessary to think about how different governance mechanisms interact with each other. In addition, they also thought that it is necessary to take into account how different stakeholders will react to different instruments. Subsidies may for example make a lot of difference for small scale farmers, but may not matter to large estates, so there you would need different types of instruments. In general, 'finger pointing' approaches were thought not to be helpful. Instead, it is better to try to motivate land owners in different ways. Bringing back more extension and advisory services may help by pointing out the advantages of particular practices. As most of the agri-environmental measures do not bring any financial gains to land managers, they are only interested in taking part in the kinds of schemes that they find interesting. However, it may also help to emphasise where schemes can enable land managers to do things that are beneficial to them in other ways, for example by enabling them to put in fencing. Governance mechanisms should also draw more on the experiences of the land managers.

4. Next steps

The outcomes from this workshop will be used by the researchers to aid the design of the next research stages in the PROVIDE project. This will include modelling and scenario approaches to evaluate some of the governance mechanisms suggested by the workshop participants. Participants of this as well as of previous PROVIDE workshops will be invited to take part in this next step of the project in the form of another workshop planned to take place in the autumn of 2017.

The final outputs of the research will be used to produce scientific publications contributing to the scientific literature on the perceptions and social values of public goods from agriculture and forestry. In addition, they will be made publicly available and fed back to the European Commission who is funding the project. This report has been circulated to all workshop participants (and interested workshop invitees) for information and to ensure the discussions have been interpreted accurately.

Acknowledgements

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Appendix 1: SWOT post-it's.

Strengths

(number of dots placed by participants)

- Regulation – works where incentives don't e.g. large estates (4)
- Regulation – can be used towards a specific outcome (3)
- Regulation(s) provides a common standard in WQ +/ or biodiversity (4)
- Ref Ag Pyts – can be targeted, Taxes - - -, S. Chain – direct effect on farms (1)
- Ag Payments WTO COMPLIANT (1)
- Ag reform – accepted institutionally, has budget, has leverage if used alongside other mechanisms (1)
- Reformed payments are directed towards outcomes rather than input to the land manager
- Appropriate payment rates for agri-env schemes to incentivise (1)
- Mkt, supply chains, reforms play into "zeitgeist" or "better navigation" + " sector plans"
- Each one [mechanism] has diff strengths but mix and match (flexibility) in an overall strength
- Pub. Opinion long term stable
- Public opinion can change approaches very rapidly
- Better public understanding of food production
- Supply chains are market driven and are able to respond to public demand for public benefits (1)
- Co-op approaches- can be directed towards specific issues in specific areas (1)
- Co-operative approaches reduce risk and encourage synergy and landscape scale outcomes
- Co-op approaches supply change regulation
- Co-ops –wider areas, greater effects
- Co-op approaches (like catchment partnerships) bring different stakeholders under the same roof. (1)
- Catchment level partnerships- offers greatest potential for meaningful / positive change (3)
- Improved resource use through partnership & exchange between farms
- Tax – rules are clear
- Tax Breaks deliver
- Taxes- clear / obvious
- Regulation can be cheaper if public purse is tighter (3)
- Regulation is cheap

Weaknesses

- (Current) agri-payment market mechanism – taxes (3)
- Regulation is untargeted (3)
- Co-op approaches can be challenging when parties have differing priorities (3)
- Political will affects how regulation is implemented
- Uptake / perceived relevance to local circumstances / issues

- Stakeholder participation/lack of
- Co-operative measures being ignored / dismissed
- Non-cross compliance [?] have such small fines that v low impact on rich landowners (2)
- Many approaches lack evidence that lead to +ve change e.g. cooperative public opinion
- Regulation - trade-offs between delivery of different ESBOs (2)
- If thinking of these in a bundle-who designs, who implements, who evaluates, who accountable? (1)
- No magic bullet or efficiency gains always realised- integration takes time and money
- Taxes – easy to avoid / challenge?
- Reformed agri payments may undermine visibility of the sector (e.g. NZ) impact on bio/ wq (2)
- Public opinion is fluid and sometimes contradictory / easily influenced, Needs [focus?] on biodiversity / soil health longer term (2)
- Ag reform –hypo regulation- irritates farmers – disallowances, risk aversion, 'good farmer' ideal may be challenged by 'good' AE behaviour (2)
- AG payments bureaucracy
- AG payments expensive (2)
- Further regulation focuses the land manager on compliance and penalties rather than on positive outcomes (1)
- Most people think PES = AECS. If it is not the same then how can PES work longer term -> is profit consistent with protection of WQ and biodiversity?
- PES is ineffective at the systems/spatial level as it is most effective for one ES not the connection between ESs (2)
- Regulation can be too weak in base line +/- compliance to be effective in protecting biodiversity / WQ
- Regulation / lack of observance / non level playing field
- Reg = hard to localise / monitor. Ref. ag. pyts = lower payments (1)

Opportunities

- Deliverable environmental outcomes (4)
- Reform of agri support regime – potential to better target incentives (4)
- Taxes –changes to fiscal regime would change pattern of ;land ownership (3)_
- BREXIT- chance to redesign appr + can't use EU as excuse anymore
- Ag schemes to target species / areas effectively (3)
- Potential for reformed agricultural payments to be more closely aligned with effective provision of public goods (2)
- Ag schemes to target efficient producers

- Farm reform – more money for farm level AEPs, collaborative work strengthened. Payments by results? (2)
- Public opinion- (new) argi payments, co-op approaches (1)
- Public opinion – publicise farmer / landowner payments (2)
- Taxes – use of revenue
- Changes in tax regime impact on land ownership & management. Chance to take long-term view for biod & WQ (1)
- Need for new investment routes due to low % rates etc. -> nat. cap. bonds opp
- Marketing Scottish produce as green (1)
- Co-operative approach- testing out / piloting for ecosystem service delivery (1)
- Collective approaches require collaboration for multiple outcomes. Needs [?] resourcing (2)

Threats

- (New) agri payments (or lack of) (3)
- Market mechanisms- can have detrimental effect on environment (3)
- How to make payments relate to delivery? (so impact of measure not a measurable itself) (3)
- Financial (poor) robustness of Ag sector (3)
- Supply chains operate at global level so can change rapidly & impact local context (1)
- Change in supply chain- BREXIT (1)
- Market mechanisms like PES run on those that can be measured but this might not meet need (1)
- Supply chain- market pressures, global trade, BREXIT!
- Farm reform – BREXIT- whatever farm policy, vested interested may [reassert] production in

Scotland, step changes in land management because of BREXIT. (2)

- Taxes – disliked / distortive
- Taxes – driving up land values, pattern of ownership, large land-holdings in hands of the few

(2)

- Disliked / distorted
- Reformed payments – how to “police” this (2)
- Public opinion – false news / info (1)
- Public opinion against farm support (2)

- Public perception – pressure to protect spp. e.g. badgers, based on sentimental instinct not scientific fact (2)
- Public opinion – action protect WQ / biod.action tends to depend on available income, time,

and marketing which are not control / predictable

- Inertia at public / state level
- Co-op had to achieve (1)
- Ag. Payments poorly funded (2)
- Alternative priorities from WTO / EU / UK gov -> economic growth@expense of public goods

(1)

- Funding cost / cuts -> loss of incentives or in kind help, loss of staff capacity, loss of institutional memory (1)

Appendix 2: Workshop presentation

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Workshop on governance evaluation

Anja Byg, Michaela Roberts, Carol Kyle, Sophie Tindale

THE FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

HORIZON 2020

Workshop outline

- Welcome & update on PROVIDE
- Presentation on the PEGASUS project
- SWOT analysis of the governance mechanisms
- Multi-criteria evaluation of governance
- Wrap-up

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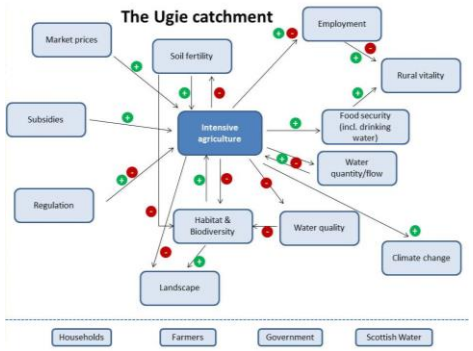
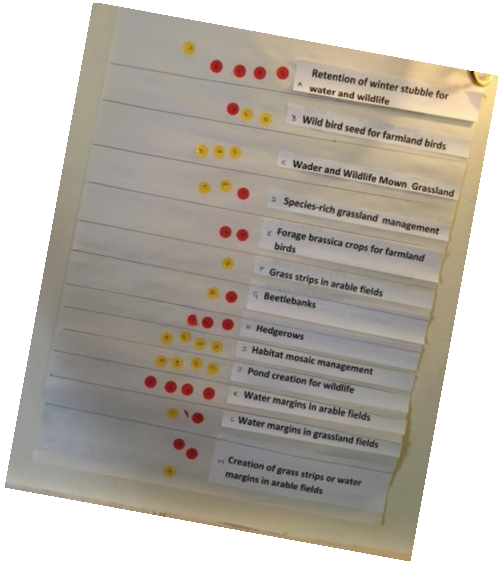
- 14 partners in 13 countries
- Identify hotspots were public goods are delivered
- Characteristics of agriculture and forestry systems that deliver multiple public goods
- Ways of valuing public goods
- Evaluation of governance mechanisms
- Co-construction with stakeholders!

http://www.provide-project.eu

Work so far

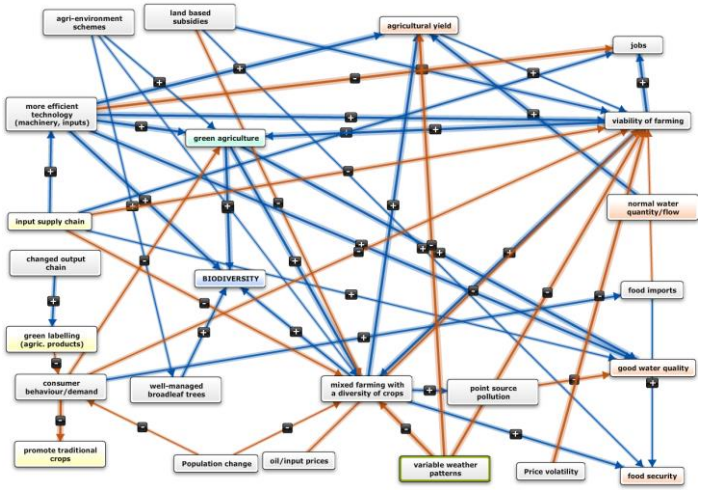
- 1st workshop: what are public goods, where are they and what are the issues?
- 2nd workshop: 'system maps' of the two hotspot areas, governance mechanisms and criteria, information needs
- Autumn-winter 2016: On-line survey on people's willingness to pay for biodiversity and water in Aberdeenshire
- Autumn 2016: Workshop with farmers in the Ugie on agri-environmental schemes and payments





Work so far

- 3rd workshop: discussion of valuation results & governance targets
- Autumn 2017: two participatory modelling workshops (scientists + local stakeholders) to explore perceptions of links between governance mechanisms, agriculture, water & biodiversity



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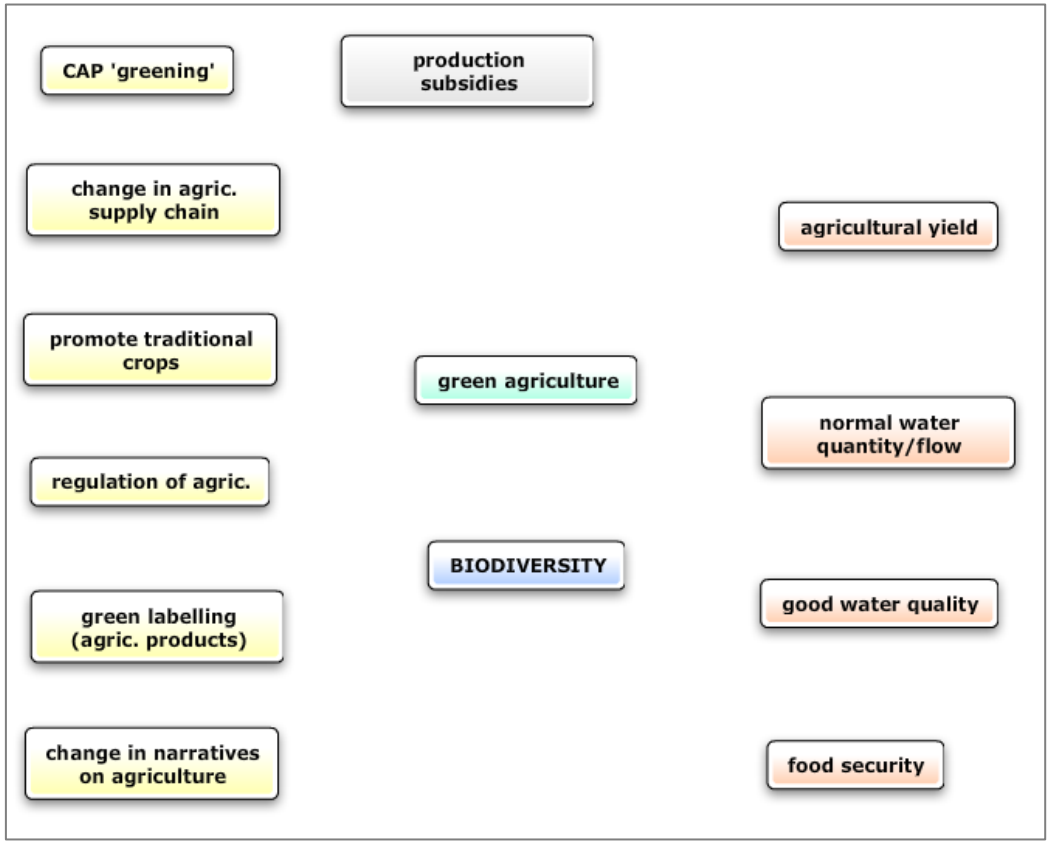
Modelling: fuzzy cognitive mapping

- What are the different elements in a system?
- How are they linked? (direction, and + or -)
- How strong is the link?

→ Model shows how the system works according to stakeholders' perceptions



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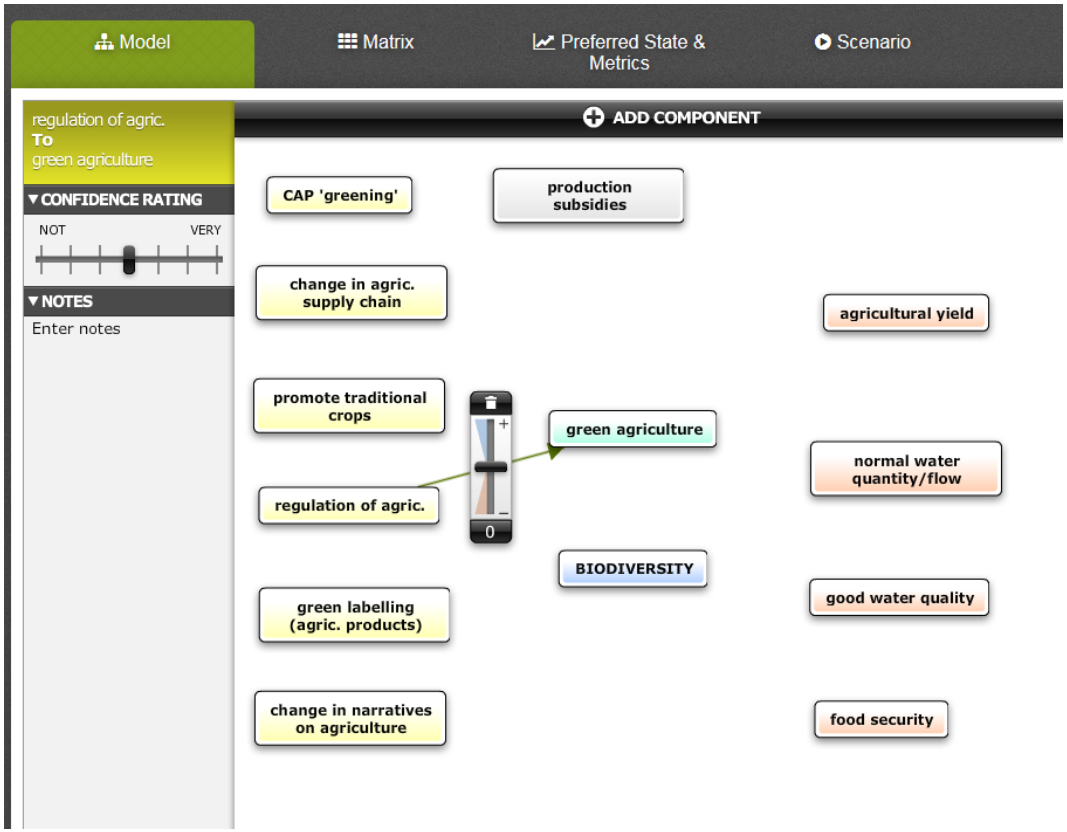
Modelling: fuzzy cognitive mapping

- What are the different elements in a system?
- How are they linked? (direction, and + or -)
- How strong is the link?

→ Model shows how the system works according to stakeholders' perceptions

- Run model with & without modifying some of the factors



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Modelling results

- Structure of maps similar between expert and farmer.
- Green agriculture predicted to have largest direct impacts on both water quality and biodiversity.

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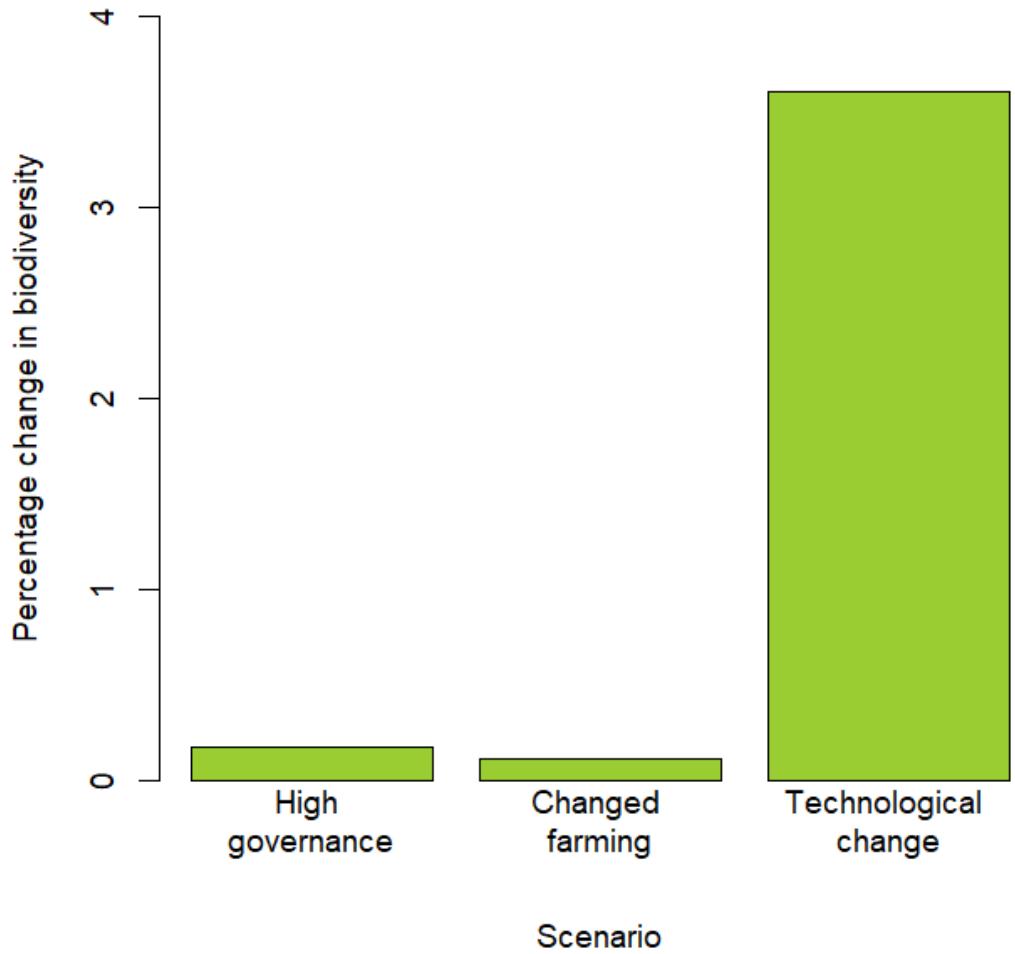
Modelling results: Biodiversity

- Scenarios:
  - High governance
  - Changed farming
  - Improved technology
- All predicted to improve biodiversity – largest improvements for technological change



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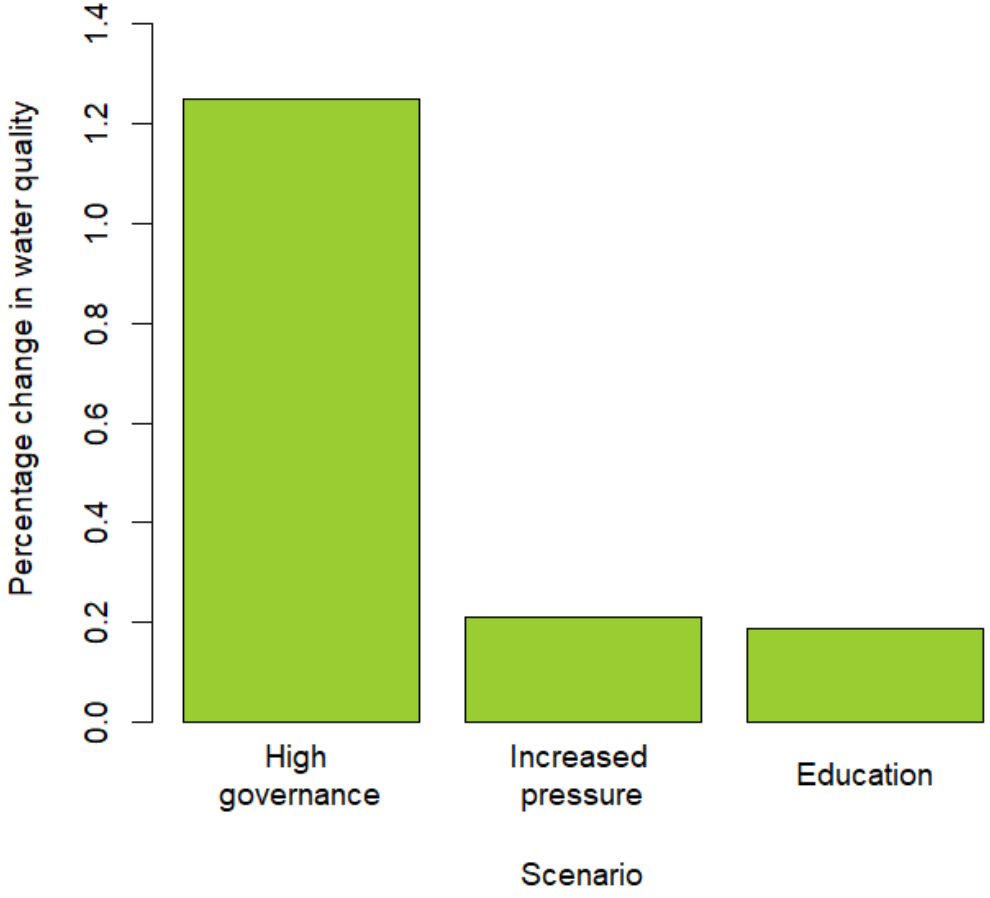
Modelling results: Water quality

- Scenarios:
  - High governance
  - Public and retail pressure
  - Increased education
- All predicted to improve water quality – largest improvements for high governance



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The PEGASUS project…

PEGASUS

Public Ecosystem Goods and Services from land management – Unlocking the Synergies

Chris Short, University of Gloucestershire

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Governance package

From previous workshops:

- Reformed agricultural payments (agri-environmental schemes, land-based subsidies)
- Market mechanisms (e.g. PES)
- Taxes
- Regulation
- Public opinion (changed narratives, branding/ labelling, awareness)
- Change in supply-chains (shortening chains, provide alternatives, inputs as well as outputs)
- Cooperative approaches (e.g. catchment partnerships)

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SWOT analysis

What are the 3 main

- Strengths
- Weaknesses
- Opportunities/enabling factors
- Threats/barriers

that are likely to influence performance of the package of governance mechanisms?

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SWOT analysis

Examples of enabling factors/opportunities and barriers/threats impacting on the performance of the governance mechanisms

Role of society
Cultural pressure
Awareness
Lobbying

Natural conditions
Soil type
Climate

Advice
Technical support
Information

Farmers characteristics
Experience
Age of farmers
Moral obligations

Type & Intensity of production

The role of the State
Trust
Other policies

Ownerships structures

Economic factors
Profitability
Costs

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Discussion - SWOT

- Similar for biodiversity & water?
- From whose perspective are things strengths, weaknesses, etc. ? Is it different for different groups?
- Would the factors be different for other public goods?

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Three most important SWOT factors

Which are the three most important

- Strengths
- Weaknesses
- Opportunities/enabling factors
- Threats/barriers

(three sticky dots for each category)

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Coffee break!

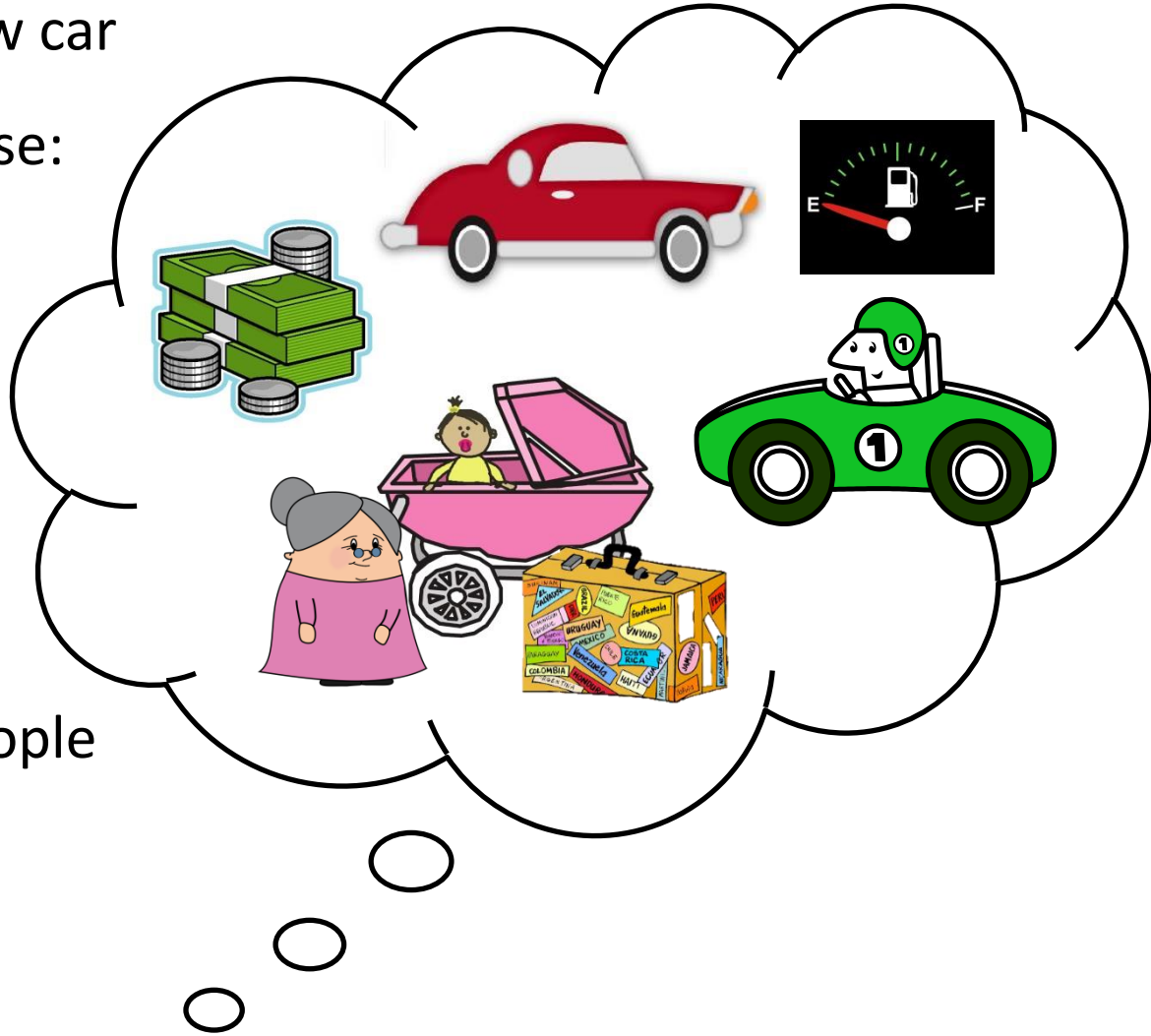
10 minutes

Multicriteria analysis

Example: Choosing a new car

Criteria that you could use:

- Cost
- Safety
- Fuel efficiency
- Speed
- Looks
- Amount of stuff & people you can fit
- …



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Multicriteria analysis

Step 1: How important are different criteria to you?

Person A

	Importance (0-10)
	6
	0
	9
	5
…	…

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Multicriteria analysis

Step 2: How do different options perform against the criteria?

Person A

	Importance (0-10)	Car 1 (0-10)	Car 2 (0-10)	…
	6	5	9	
	0	8	2	
	9	2	8	
	5	6	3	
…	…	…		

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Multicriteria analysis – biodiversity or water

Step 2: How do different options perform against the criteria?

	Importance (0-10)	How do AES/Coop approaches score against the criteria? (0-10)
Strength: Can promotes specific outcomes/target	10 = very important	10 = has this strength to a large degree
Strenghts: Can set common standard		
Strength: enforceable		
Weakness: political will impacts implementation		10 = has a lot of this weakness
Weakness: different actors have different priorities		
Weakness: not targeted		
Opportunity: can impact wider areas		10 = opportunities/enabling factors very likely
Opportunity: Brexit – EU not an excuse anymore		
Opportunity: can influence land ownership		
Threat: poor financial robustness of AG sector		10 = threat/barrier very likely
Threat: can have detrimental effects on environment		
Threat: disconnect btw. Payment and delivery		
Good governance criteria 1		10 = fulfils this criterion to a large degree

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Discussion – multicriteria analysis

- Considering how you ranked the importance of criteria and scored the governance mix, how well do you think it does overall?
- Are there trade-offs between different criteria?
- Do different elements in the governance mix supplement each other? (e.g. strength of one addressing weaknesses of another)
- How could the governance mix be improved?
- Are there differences between biodiversity & water?

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Next steps…

- Report on this workshop
- EU workshop (March 2018): similar to this workshop but at EU level
- Evaluation of project & reporting back to EU (end of August 2018)

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Thank you for your time!