Fact sheet about each of the different incentive structures

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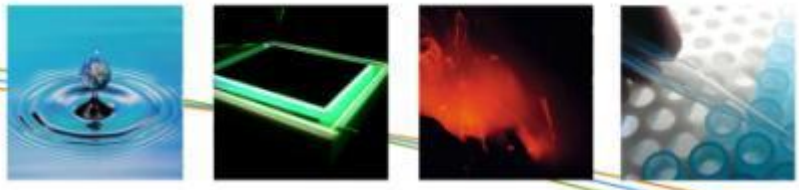

CHANGE RECORD

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Contents

This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement No. 727450

List of Figures

List of Tables

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List of abbreviations & acronyms

BMP	Best management practice
E	Education
E	Economics
PoM	Programme of Measures
PPP	Plant protection product
MM	Mitigation measures
RESET	Regulation, Education, Social pressure, Economics, Tools
R	Regulation
S	Social pressure
T	Tools

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Management summary

WaterProtect conceptualizes water resource systems as complex socio-ecological systems, consisting of a resource system and a governance system. In the management of these water resource systems, focus in often on the resource system, whereas the impact of the functioning of the governance system is often underrated. However, analysing and improving water governance in areas with water quality problems could give new impulses to different actors and incentivize them to take action. Therefore, the WaterProtect project pays special attention to governance and assumes a multi-actor approach to bring change in the action labs. In this context, WP2 was designed to assess the current governance state and governance progress in the different action labs. As most action lab leaders have no expertise with how to assess and improve governance, a framework for analysing and improving water governance systems was developed, which is extensively described in D2.1. How the different action labs implemented the framework in their action lab is subsequently shown in D2.2.

This deliverable, D2.3, complements D2.2 by giving a structured overview of the different transition pathways that were followed by the action labs. More specifically, this deliverable presents for each action lab a fact sheet, with the different incentive structures that were implemented for each of the predetermined ambitions. These incentive structures are classified according to the RESET mindset model, which distinguishes five different types of structures, i.e. (1) policy and legislation, (2) education and information, (3) social values and norms, (4) markets and finances, and (5) tools and infrastructure. To reach as many people and convince them to take action, action labs were encouraged to use different types of incentive structures at the same time, as stimuli are often complementary and may appeal in different ways to different actors.

The fact sheets show that the majority of the efforts in the action lab were focused on awareness raising. This is logical, as education and the dissemination of information are considered as the first and most important steps towards a better functioning governance system. However, some action labs could convince their stakeholders rather quickly of the need to take action and, as opposed to other action labs, were also able to spend efforts on other types of incentives, including the development of tools or financial incentives. These differences in the progress towards goals can be explained by a variety in local context factors, which will be further explored in D2.4 (May 2020).

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1 Introduction

The overarching aim of the WaterProtect project is to contribute to the effective uptake and realisation of innovative farming systems that guarantee safe and sufficient drinking water. The farming systems concept is used as an overarching term, including farming techniques, management practices and mitigation measures. As appears from the comparative case study assessment (Deliverable 6.1 – Complete comparative case study assessment: mapping existing cases, water management systems, WaterProtect action labs) and the inventory of available mitigation measures and BMP's (Deliverable 4.1 – Inventory of available mitigation measures and BMP's including cost-effectiveness analysis), many best management practices (BMP's) are already available that optimise the delivery of good water quality. Our focal question is why these validated systems are not implemented and how farmers can be triggered and motivated to use these systems in the future.

During the project, farmers in the action labs were stimulated to change behaviour and apply some (innovative) farming systems. Different transitions pathways could be observed in the participating countries. The aim of this deliverable is to present the observed transitions pathways that stimulated change of behaviour and the implementation of BMP's.

In the second section, we describe a number of theories that are used frequently to explain behaviour and (reluctance to) change:

- The theory of cognitive dissonance
- The field theory
- The theory of planned behaviour
- The innovation diffusion theory

These theories help to understand why some innovative farming systems are (not) implemented and how actors such as farmers can be motivated to implement them in the future. They point out that human behaviour is influenced by a diverse set of factors. To stimulate action labs to use different incentive structures at the same time , we used the RESET mindset model, which describes five types of mechanisms, as a base structure for our governance research in WaterProtect. This model is explained in the third section.

Section 5 shows the different incentive structures that are tested in the action labs. For each ambition, a description is given. We end up the deliverable with a short conclusion.

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2 Behaviour theories

2.1 Theory of cognitive dissonance

The theory of cognitive dissonance describes a behavioural state of dissonance, a gap between what people know and what people do (Festinger, 1962). Even though people strive for internal consistency in their opinions, attitudes and actions, exceptions to this consistent behaviour exist. In some cases these behavioural gaps can be rationalised in a way that they still fit with the persons individual knowledge or attitude. For example, even though the farmer is aware of the negative consequences of plant protection products (PPP) on human health, they can argue that other sources of pollution have a greater impact on human health, or that people can die from many other things than PPP pollution. In this way the farmer's use of PPP still fits with his general opinion on the use of PPP's. So, there is no question of psychological inconsistence.

However, in most of the cases the dissonance cannot be rationalized and the inconsistency remains. People will then experience a psychological discomfort. The associated psychological tensions will motivate people to reduce dissonance, which is called cognitive dissonance reduction. The greater the magnitude of dissonance, the greater the motivation will be to tackle this behaviour-action gap.

The theory of cognitive dissonance is most applicable to settings where people already support the desired objective, but their actions do not fit with it (Juvan and Dolnicar, 2014). In those states of dissonance, with people already having the desired attitude and knowledge, dissonance reduction can be pursued by changing attitude or by changing behaviour (Festinger, 1962). Ideally, people would change their behaviour, but it is often much easier to adapt an attitude or an opinion rather than change behaviour.

This theory learns us that knowledge of the problem is not sufficient to change people's behaviour. Even though farmers are aware of the potential negative impacts of their behaviour, they can still revise their opinion about it rather than adopting a new farming system. This suggest that the way farmers are directed towards behavioural change is crucial.

2.2 Field theory

In field theory, the psychologist Lewin argues that human behaviour occurs in a given force field or life space, which is shaped by the totality of coexisting and interdependent forces that act on an individual or group (Burnes and Cooke, 2013; Endrejat et al., 2017; Lewin, 1942). Lewin defined two types of forces: driving forces and restraining forces. The driving forces are the factors that stimulate or motivate individuals towards behavioural change. For example, group standards or social norms can act as driving forces, as groups are part of the individual's life space (Lewin, 1947). Restraining forces are factors that counteract or undermine the driving forces.

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According to Lewin, a first step towards behavioural change is by studying the individual's life space. Having a view of a person's life space can illuminate possible stumbling blocks or difficulties preventing them from acting with a desired behaviour. These observation can then be used to formulate strategies which either enlarge the driving forces or reduce the impact of the restraining forces. However, an individual's life space is highly influenced by the individual's perception. Farmers living in the same area, but having another perception about their environment, could experience different stumbling blocks or motivational factors. If a farmer is not aware of the possible innovative farming systems he could use to improve water quality, in his perception those systems will not exist and as a consequence he will not consider them.

Hence, the uptake of innovative farming system requires a thorough understanding of the perceived life spaces of the farmers. In some cases, awareness building on the water quality problem or possible solutions will be needed. In other cases, farmer could be aware of the problem and the suitable BMP's, but some factors can prevent them from implementing those BMP's. It is clear that a mix of awareness building and incentives are needed in order to target a variety of individuals.

2.3 Theory of planned behaviour

A frequently used theory that describes behavioural change is the theory of planned behaviour. This socio-psychological theory dictates that intentions of people to execute a certain behaviour are guided by three considerations: 1) attitude, which is the degree to which execution of the behaviour is evaluated positively or negatively; 2) subjective norm, which is the perceived social pressure from significant others (referents) to engage or not to engage in the behaviour; and 3) the behavioural control (the perceived own capability to successfully perform the behaviour) (Ajzen, 1991). Given sufficient actual behavioural control, which is the availability of prerequisites in terms of capital, knowledge, skills, and opportunities, the theory dictates that people will carry out their intentions (Fishbein and Ajzen, 1975).

In summary, if someone is internally motivated, feels supported by people he cares about, and is confident about what needs to be done, he will have an intention to change his behaviour (Lam et al., 2017). A critique on this theory is that it is purely based on psychological variables which are not directly observable, and that it assumes that people always make rational decisions.

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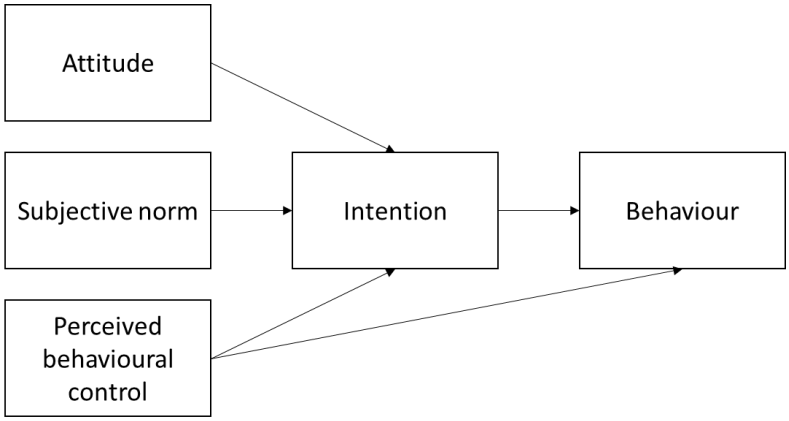

Figure 1: The theory of planned behaviour. The theory states that performing a certain behaviour is directly influenced by the intention to perform that behaviour (van Dijk et al., 2016). The intention, in its turn, is influenced by the individual's attitude, its perceived behavioural control and the subjective norm. Figure based on (van Dijk et al., 2016).

2.4 Innovation diffusion theory

The innovation diffusion theory (figure 2) dates from 1962 and describes the process by which an innovation is communicated trough certain channels over time among the members of a social system (Everett M. Rogers, 2003). Rogers (1962) found the characteristics of people to play a role in this, which should be studied to help in the dissemination of an innovation. He facilitates this by defining five adopter categories, which are shown in Figure *2*, i.e. (1) innovators, a small group of people exploring new ideas and technologies; (2) early adopters, considered to be opinion leaders who may share positive testimonials; (3) early majority, a group of followers, who will take the testimonials of early adopters at heart; (4) late majority, sceptics who are not keen on change; and (5) laggards, who will only adopt if there are no other alternatives. The general characteristics of these different adopter categories are further explained in Table 1.

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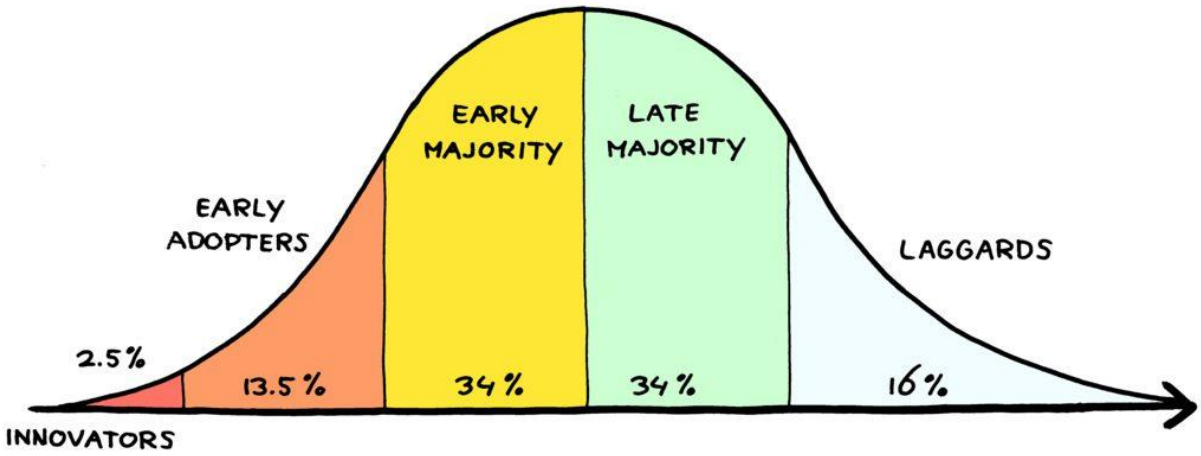

Figure 2: The innovation diffusion theory. Rogers categorizes people into five groups of adopters based on the mean and standard deviation of a normal distribution. The non-cumulative share of each group plotted against time typically results in a bel shaped curve. However, in practice the curve is often skewed right or left. Figure consulted from (IoTJuice, 2017).

Table 1: Categories of adopters, defined by Rogers. Table based on (Everett M. Rogers, 2003).

Innovators	-	Eager to try new ideas
	-	Comfortable with a high degree of complexity and uncertainty
	-	Mostly have substantial financial resources
	-	Not always integrated in a local circle of peers: social relationships are more cosmopolite than normal
Early adopters	-	Well integrated into their social system
	-	Greatest potential for opinion leadership in most social systems as they are respected by their peers and have a reputation for successful and discrete use of new ideas
Early majority	-	Adopt new ideas just before the average member of a social system
Late majority	-	Sceptical group
	-	Adoption may be born out of economic necessity and in response to increasing social pressure
	-	Cautious about innovations
	-	Reluctant to adopt until most others in the social system do so
	-	An innovation must be approved by the system norms in order to convince them
Laggards	-	Traditionalists, fixed on the past, base their decisions primarily upon past experiences rather than influence from their social network
	-	Mainly interact with other traditionalists
	-	Suspicious of innovations, innovators and change agents

Furthermore Rogers (1962) explains that also the characteristics of the innovation determine the adoption process. As such, he defined five attributes of innovations which have to be taken into account, which are (1) relative advantage, the degree to which an innovation is perceived as being better than the idea that it supersedes, (2) compatibility, the degree to which an innovation is perceived as consistent with the existent values, past experiences, and needs of potential adopters, (3) complexity, the degree to which an innovation is perceived as relatively difficult to understand and use, (4) triability, the degree to which an innovation may be experimented with, and (5) observability, the degree to which the results of an innovation are visible to others.

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Thus, the innovation diffusion theory of Rogers (1962) learns us, that, in order to increase the adoption of good farming practices to safeguard drinking water resources, we should work on different fronts at the same time. Moreover, we have to attract the attention of both early and late adopters by working out different, complementary incentive programs. These incentive programs should be designed carefully, with special attention being paid to their relative advantage, compatibility, complexity triability, and observability. This often translates itself into an interplay of both general support programs addressing the whole farmer community and a customized support targeting the individual farmer.

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3 The use of the RESET Mindset model in WaterProtect

From the theories explained in the previous section, we learn different lessons. First, the field theory shows that a thorough understanding of the realities of people is needed to design effective intervention strategies. A first step towards a better water quality therefore includes water quality monitoring and an extensive stakeholder analysis. Second, the theory of cognitive dissonance shows that in order to take action, actors first of all need to be aware of the water quality problem. Awareness raising seems thus an important step that needs to proceed further actions. Third, the theory of planned behaviour shows that behaviour is the result of an interplay of, amongst others, rules and norms, social contacts, capabilities and infrastructure. Intervention programs should thus be focused on these different aspects. Last, the innovation diffusion theory shows that we have to work out different, complementary incentive programs to capture the interest and attention of both early and late adopters.

To ensure that the interventions programs are complementary and based on different types on incentives, the RESET Mindset model can be used (Lam et al., 2017). This model categorizes incentive structures into five different types: regulation, education, social pressure, economic incentives and tools. We changed the terms slightly to be more accessible in practice: policy and legislation, education and information, social values and norms, markets and finances, and tools and infrastructure. Table 1 gives more details about the content of each term. Jansen et al. (2012) agrees with the theory of planned behaviour by stressing that to reach as many people and convince them to take action, one should not choose among different strategies, but use them all simultaneously. Moreover, by using a mix of stimuli, it is possible to reach different types of actors.

An example of such an intervention program, combining a mix of stimuli, is the financing and installation of a common washing platform for spraying machinery. The installation of a washing platform is a BMP that targets the point-pollution caused by external washing of spraying machines (Deliverable 4.1 – Inventory of available mitigation measures and BMP's including cost-effectiveness analysis). One of the barriers that hold farmers back to install such a platform is a lack of financial resources. Financing a common platform for the local farmers could then be a suitable intervention program to help farmers overcome this barrier. This seemingly purely financial intervention program does, however, also includes other incentive types. The availability of a washing platform in the vicinity of the farmer makes it easier for the farmer to wash his machinery in the appropriate way by collect his rinse water and therefore preventing point-pollution. In this way, the platform could thus also be seen as a tool, facilitating the performance of desired behaviour. In addition, the common use of the platform will bring farmers together, which, in turn, forms an opportunity to share experiences, building trust, improve social cohesion, etc.

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Table 2: The RESET Mindset model. The table gives more details about the content of each type of incentives. Table based on (Lam et al., 2017).

R **Regulation (R) – Policy and Legislation**	Regulation is a common strategy to enforce positive behaviour or prohibit unwanted behaviour. Regulation addresses weaknesses which are identified with respect to the implementation of policy and legislation. Unlike the stimulating strategies it works through coercion, and does not steer towards voluntary behavioural change. It may imply the creation of new regulation, which is often considered to be a slow and cumbersome process. However, this strategy has to be interpreted in a broader way, and may, among others, also include actions that strengthen the enforcement mechanisms of existing regulations, or that increase the participation in consultation processes of legislative proposals.
E **Education (E) and Information**	In many regions with water quality problems sensitizing campaigns are set up to inform farmers and other stakeholders about water problems. This can happen via websites, videos, presentations, TV, local radio, etc. The campaigns try to change the perception, attitudes and mentalities on the use of BMP's. Education programs could imply trainings and demonstrations on the correct handling of PPP, which farmers need to attend to obtain and retain their spraying license. Communication and education are commonly-used intervention instruments to improve the water quality in a catchment area.
S **Social pressure (S) – values and norms**	Social pressure influences people's norms and values, and can have a long-term effect on internal motivation. As social cohesion is important for people to feel successful, social pressure is considered as a powerful tool to change people's behaviour. Also in water catchments, actors can use social pressure as a tool to convince other actors to contribute to better water quality. This can for example, be done through establishing community groups aimed at keeping the village clean and pollution-free. But also more informal meetings and gatherings, as part of daily or weekly activities in the community, such as local markets, may help in transferring social pressure to a wider range of stakeholders.
E **Economics (E) – markets and finances**	External motivation can be evoked by financial stimuli such as bonuses and penalties. These can be granted or imposed by both governmental instances as well as by private market actors. This instrument addresses weaknesses identified at the level of markets and finances. Vatn (2015) classifies economic stimuli, to improve environmental governance, in three categories: payments for ecosystem services, certification programs and liability based systems or cap-based systems. Payments for ecosystem services are the most common type of arrangement and are largely non-market, being dominantly based on state taxation and subsidies. Certification programs ensure the protection of ecosystems through certified

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	production methods for which the producer can claim a premium. Finally, liability based systems use the market/trade as a way to reduce costs for the protection of ecosystems. An example of the latter is water quality trading, in which permitted dischargers are allowed to trade water quality credits or pollution allowances in order to meet water quality standards (Pacific Institute, 2015).
T **Tools (T) – and infrastructure**	Innovation can result in tools and arrangements which make the desired behaviour much easier and self-evident to perform. Tools refer especially to technical provisions, means and methods, which can stimulate actors to perform in a certain way. Producers of plant protection products for example could design packages where the lid is attached to the package, so the lid to which the highly concentrated product is attached to, cannot get lost in the environment. Arrangements imply innovations which are more of a societal nature. An example is an arrangement in which specialized machinery is put at the disposal of a group of farmers for communal use, for which special guidelines and rules have to be drafted.

4 Data collection

Farmers were motivated to implement new farming systems during the WaterProtect project. This was pursued in many different ways by different types of actors. To be able to give an overview of the different incentive structures that were set up to reach specific ambitions, action labs were asked to report on their ambitions, on the government process, and on their achievements. At the end of the project they were also asked make an evaluation and a reflection of their action lab. The different formats in which action lab leaders reported about their action lab, and the different topics about which they had to report are explained in this section. Action lab leaders were encouraged to use different sources in their reporting, including face-to-face contacts with stakeholders, formal written communication and electronic communication (Figure *3*). Differences in the degree of detail to which action lab leaders have been reporting, is reflected in differences in comprehensiveness of the fact sheets.

Face-to-face	Formal written	Electronic
• Meeting • Workshop • Discussion group • Interview • Questionnaire • Bilateral conversation	• Scientific papers and reports • Legislation • Guidelines • Books	• E-mails • Official databases • Websites of organisations

Figure 3: Methods used by action lab leaders to gather the requested information

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4.1 Reporting the ambitions and objectives

Action lab leaders were asked to fill in a questionnaire concerning the ambitions and objectives of their action lab. The aim of the several in-depth questions was to guide action lab leaders through the process of formulating ambitions and objectives by drawing their attention to several important aspects. Figure 4 lists the main topics of the questionnaire.

Knowledge building	Awareness	Local context	Incentive programs	Building blocks
• What techniques will be used to improve actor knowledge on the problem? • Who will be responsible for the knowledge building?	• Which actors will be targeted for increasing their awareness on the problem? • Which methods will be used? • Which results are expected from the awareness campaigns?	• Are the current or adapted way of agricultural production and the production of drinking water compatible? • Are pollution sources and individual polluters identifiable? • What are appropriate agricultural measures in your action lab?	• Who are you going to target in your action lab and why? • Which incentive mechanisms are you going to use and how are you going to do this? • Which actors will be involved and what do you expect from them? How are you going to approach them?	• Which actions are you going to take to ensure building blocks of a well-working system are present? • Which advantages and disadvantages do you expect on the catchment scale?

Figure 4: Summary of the main topics covered by the questionnaire.

4.2 Reporting the process

During the project, action lab leaders were asked to report on the meetings and actions taking place in the action lab. This was done through a comprehensive excel file, which had to be updated regularly. Figure *5* shows the structure of the excel file.

	INTERACTIVE MOMENT:	INTERACTIVE MOMENT:
PREPARATION		
How did you motivate/convince stakeholders to participate? (direct email, letter, phone, through associations, involving persons with good reputation, invite established connections,		
OBJECTIVE		
What were the goals of the meeting?		
Which questions were discussed?		
ACTORS		
Which actors were invited?		
Which actors were responding?		
Which actors were missing? Why?		
METHODS		
Which methods were used?		
Who managed the techniques?		
GROUP PROCESS		
Was there a common objective for the actors?		
Was there a conflicting situation between the actors?		
What were the major challenges you were faced with? (identify relevant stakeholders, language issues, time constraints to organize and to present, selecting the right channel for		
Were the activities relevant and interesting to all members?		
RESULTS		
What were the main advantages or positive results of organizing this session? (gathering quicker and deeper insight in the topic, establishing long-term relationships, contribute to networking, sharing knowledge, ensuring dialogue between stakeholders, feedback, etc.)		
What have you learned from the actor meeting?		
OTHER		
Other practical (or theoretical) experiences that you want to share with the partners with regards to the stakeholder		

Figure 5: Structure of the excel file that was used to inform the work package leader of new updates concerning the process of the action lab.

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4.3 Reporting achievements

Similarly as the reporting on the process, the action lab leaders were asked to report on the achievements in their action lab in the corresponding excel file. Figure *6* shows the structure of the excel file.

	ACHIEVEMENT
(date dd/mm/yyyy)	April 1 2019
Improved water quality	
What improvement did you measure?	
What explains the improvement?	
Extra BMP's implemented by local stakeholders	
Which BMP is implemented? By who? Amount of people implementing?	
What was the incentive for this?	
Mitigation system installed or demonstrated by WaterProtect partners	
Which system is installed/demonstrated? By who? Amount of people reached?	
What was the incentive for this?	
Harmonised datasets being used by local stakeholders	
Which dataset is available? In what format (web, report, ...)?	
Who uses the dataset? For which goal? Amount of people?	
What was the incentive for this?	
Participatory webtool being used	
Who uses the webtool? How many users? How many	
What was the incentive for this?	
Positive change of behaviour with local stakeholders	
Who changed his/her behaviour? In what way? Amount of people involved?	
What was the incentive for this?	
New/adapted regulation that facilitated better water quality	
Which regulation has been developed/adapted? How does this help? How did it improve policy coherence?	
What was the incentive for this?	
Financial system developed/implemented	
How does the financial system works? Who pays? Who gets paid? For which actions? Number of people involved?	
What was the incentive for this?	

Figure 6: Structure of the excel file that was used to inform the work package leader of new updates concerning the achievements of the action lab.

4.4 Evaluation and reflection

Finally, action lab leaders were asked to answer a list of reflection and evaluation questions. The questions were centred on three important aspects:

- the multi-actor process
- building blocks for a well-working governance system
- success, failure and learned lessons in the action lab

Figure 7 lists the main questions of the questionnaire.

Multi-actor process	Building blocks for a well-working governance system	Success, failure and learned lessons in the action lab
• Looking back at the multi-actor process you have been through in your action lab, how effective were the different methods (to involve different stakeholders, to create interaction and innovative ideas, to realize your ambitions, considering the time and/or money invested)? • Based on your experiences in the action lab, what are important barriers/levers to reach and involve farmers in water governance? Do you think most of the farmers are aware of the problem, and willing to take action and avoid pollution?	• To what extent is trust and transparency improved during the process? How do you see this improvement? How has it been reached? • Is there an actor/organization that can take the lead when dealing with the problem in the action lab (other than the action lab leader)? Who? If no: why do you think no one takes up this role? • Are there pioneering farmers or pioneering actors in the action lab to take the lead in implementing best management practices?	• What do you consider successful in your action lab? • What do you consider as a failure in your action lab? • Can you speak of a changed system within the timing of the WaterProtect project? • What did you learn? •What would you do different next time? • What would you do/leave the same?

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• Based on your experiences in the action lab, what were other important actors to involve in the process, in order to find solutions to the water quality problem? What are important barriers/levers to reach and involve them? Are these actors that could not be reached? Why not? What do you think could be done to reach them?	• Are there still important contradictions in opinions related to the state of the water quality and the necessary actions to improve the water quality? Are the actions clear to and agreed upon by the different actors? • Was the scale of your catchment workable? Would you recommend other regions to work on the catchment scale?	

Figure 7: Questions of the 'evaluation and reflection' reporting document

5 Fact sheets incentive structures

In this section the types of incentive structures are given for all the specific ambitions of the different action labs. This does not include the two common ambitions for each action lab, i.e. the ambition 'network formation' and 'exchange and continuation' as they represent project management tasks. Moreover, these ambitions have to be understood as intermediate ambitions, which need a lot of attention of project partners in order to make progress towards the more specific ambitions. For the actions taken related to the ambition 'knowledge building', we refer to the work done in work package 3 of the WaterProtect project.

The table briefly explains per ambition:

- The type of incentive structures used according to the RESET Mindset model
- The initiator of the actions
- The target group of the actions

As already mentioned in the previous section, most incentives are a mix of different incentive mechanisms (RESET). Underneath this overview table, a more elaborated table lists for each incentive structure the different methods that were used in the action lab.

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5.1 Belgian action lab – Bollaertbeek

Ambition – Awareness raising about the pesticide problem in the Bollaertbeek							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Intensive communication program about the problem		X	X		X	All stakeholders (extra focus on farmers, governmental organisations, drinking water company)	WaterProtect Project partners
Phytolicence	X	X				Farmers	Project partners + Department of Agriculture

R	• The phytolicence is a certificate given by the federal government indicating that you are able to handle crop protection products correctly (obligatory for professional users, distributers and advisors).
E	• Information is given to the actors in different ways. A newsletter is sent out with information on the current situation of the water quality and possible best management practices. • There is the local website where all information on the project is collected and displayed. • Bilateral conversations are organised during which the current situation related to the pollution is explained. At the start of every workshop, the problem is also explained. • The WaterProtect tool is an online application which maps all measurement results of the catchment in an accessible way. • During the training as part of the phytolicence, information about the problem is provided.
S	• During the bilateral conversations, the pollution problem is explained, and specific questions of the farmer can be discussed directly. Also bilateral conversations with other actors are organised, e.g. with governmental actors, the drinking water company or farmer organisations, in order to discuss the problem and specify the local context.

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	• In the interactive sessions of the workshops, information on specific topics is exchanged directly. Discussions among the participants create learning moments and affect the social norms and values of the participants (e.g. farmers discuss their daily practices and get feedback on this from peers and experts in the workshop).
E	
T	• The WaterProtect tool is an online application which maps all measurement results of the catchment in an accessible way.

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Ambition – Farmer practice: safe cleaning and filling place on farms							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Information and communication program		X	X			Farmers	Project partners
Collection boxes for remnant water		X			X	Farmers	Project partners
Economic support system of the drinking water company			X	X		Farmers	Project partners + drinking water company
Demonstration 'self-construction of a biofilter'				X	X	Farmers	Project partners
Temporary common cleaning place		X	X	X	X	Farmers	Project partners

R	
E	• Information on 'how to avoid point pollution by choosing a safe cleaning and filling place' is given during the farm visits and during workshops and demonstrations related to this topic. In the discussion groups, farmers were asked about the situation on their farm and information was exchanged among farmers and between farmers and the experts. • By providing collection boxes for remnant water during the project, attention is given to the need to do so in order to avoid point pollution. • The idea of a common fill and cleaning place is discussed during the workshops. More information on the concept was given by Inagro.
S	• Farm visits are done to raise the awareness on point pollution and the need to avoid point pollution on farm level. Possibilities to avoid point pollution on the specific farm were discussed with the farmer. • The discussion groups during the workshops gave the farmers the possibility to exchange their experiences and to learn from each other. • In the set-up of the economic support system, there were discussions to give the pioneers a higher support (on the condition that they give demonstrations) and to work with a rewarding system, whereby an extra

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	payment is provided if the water quality is of a predetermined level. This could give farmers some pressure to avoid pollution. • A common fill and cleaning place can give farmers the opportunity to get to know the concept and the technique. It can also be a solution for farmer who cannot adapt their fill and cleaning place on their own farm. This option was only discussed, but not further developed. Instead, a temporary cleaning place was organised, that 5 farmers made use of.
E	• There were discussions about an economic support system financed by actors like the drinking water company, that give farmers extra financial support if they apply specific best management practices. Another discussed financial option is working with a rewarding system, which would imply the payment of a bonus if farmers participate from the beginning and if a predefined level of water quality has been achieved. • The participants of the demonstrating workshop 'self-construction of a biofilter' were given the opportunity to purchase a start kit at an attractive price. • The project partners considered to finance a common fill and cleaning place on project base, which could be used by the farmers in the catchment.
T	• During the project, Inagro made collection boxes for remnant water available for farmers and was responsible for the collection of full boxes and the processing of the remnant water. • During the demonstrating workshop 'self-construction of a biofilter', it was showed how to create your own biofilter to use on your own farm. • During workshops, the idea of installing a common fill and cleaning place was considered.

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Ambition – Farmer practice: grass buffer strips							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Agri-environmental agreements	X			X		Farmers	VLM
Demonstration measures via 'Land development Program Water-Land-Schap'	X		X	X	X	Farmers	Project partners + Province West-Flanders + VLM + De Watergroep
Workshops and farm visits on possibilities around grass buffer strips		X	X			Farmers	Project partners + Regionaal landschap + 't Boerenlandschap

R	• An agri-environmental agreement is a contract between the Flemish Land Agency (VLM) and the farmer in which the farmer promises to do certain efforts for the nature in exchange for an annual fee. One of the many possibilities is the construction of a grass buffer strip. • Additionally, the Flemish Land Agency currently gives the possibility in an national 'Land Development Program – Water-Land-Schap' to test some measures. This is a temporary program during which new ideas and measures can be tested. The Flemish Land Agency makes a contract with the farmer for the test phase (1,2 or 3 years). If the measures are evaluated as successful, they can afterwards be included in the regular management agreements.
E	• In the workshop about grass buffer strips, the usefulness and necessity of this best management practice are discussed and different possibilities are explained. Farmers explained which difficulties they encounter when making and managing a grass buffer strip. • During the farm visits, the possibilities related to buffer strips are also explained and discussed for the specific farm.
S	• In the demonstration measures of the new 'Land Development Program Water-Land-Schap', the possibility of the 'neighbour bonus' was discussed, i.e. a system in which a farmer gets extra money if he/she can convince his/her neighbour to create also a grass buffer strip.

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	• Workshops are organised to stimulate dialogue between different involved actors and to exchange experiences.
E	• When participating in regular agri-environmental agreements or the measures financed by the 'Land Development Program Water-Land-Schap' a payment is given to the farmer for the production loss and any costs incurred (for example related to sowing, maintenance and administration). • In the idea of a 'neighbour bonus', a farmer gets extra money if he/she can convince his/her neighbour to create also a grass buffer strip.
T	• The possibility was discussed in one of the demonstration measures of the 'Land Development Program Water-Land-Schap' to participate in a common management system, as part of which the maintenance of the grass buffer strip is done by an external organisation. How this works out exactly, still has to be determined.

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Ambition – Farmer practice: mechanical weed control							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Information during workshop		X	X			Farmers	Project partners

R	
E	• In the workshop on mechanical weed control, information about the practice is exchanged and a demonstration is given. • During the farm visits, these possibilities are also explained and discussed for the specific farm.
S	• Workshops are also organised to stimulate dialogue between different involved actors and to exchange experiences.
E	
T	

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5.2 Danish action lab – Vester Hjerk

Ambition – Awareness about the problem							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Information sharing campaign		X	X		X	All stakeholders	Project partners

R	
E	• Interviews were done with all consumers (including farmers) of drinking water on their knowledge and opinions on the delivery and quality of drinking water. The aim of this interviews was to raise consumers interest and make them more aware of drinking water issues. • Workshops were organised to achieve support for the project and a common understanding on the ambitions of the project. • Participatory monitoring of nitrates in the drainage system was carried out. • Newsletters were send to all actors involved, except NGO's. • The national authorities and relevant interest organisations were informed about the project and its ambitions during yearly stakeholder meetings.
S	• The workshops enabled the formation of a network of farmers supporting the project objectives. • Participatory monitoring enabled farmers to be involved in the data measurements.
E	
T	• The WaterProtect tool is an online application which maps all measurement results of the catchment in an accessible way.

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Ambition – Intelligent land use (adaptation of the land use according to the capturing zones)							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Common water fund				X		Farmers	Project partners, drinking water industry, government at the municipal level
Information campaign		X	X		X	Farmers	Project partners

R	
E	• Workshops were organised to discuss the willingness (voluntary or obligatory) to adapt the crops cultivated according to the capturing zones and to identify realistic solutions on optimization of land use. • A spatial tool to model the effects of adapted land use and farming practice changes is developed.
S	• Workshops were organised to discuss the willingness (voluntary or obligatory) to adapt the crops cultivated according to the capturing zones and to identify realistic solutions on optimization of land use.
E	• During the project a common water fund was discussed to secure common funding of future measures to protect groundwater sources. The idea of a common water fund was discussed trough multi-actor conversations with project partners, the local authorities and the drinking water industry.
T	• A tool was developed that shows the effects of adapted land use and changes in farm practices.

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Ambition – Investigation of the potentials of collaboration among the waterworks in Skive municipality with the focus on small waterworks							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Explorative meetings		X				Drinking water industry, municipalities	Water works

R	
E	• Bilateral conversations and multi-actor conversations were held with the drinking water industry and the local authority.
S	
E	
T	

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5.3 Irish action lab – Wexford County

Ambition – Awareness raising about the MCPA problem							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Intensive communication program about the problem		X	X		X	Farmers, specialist advisors	Project partners

R	
E	• Information is given to all the actors in different ways. To involve the farmers, there are organised discussion groups, farm visits and information fact sheets. • Workshops were organised for stakeholders. • The specialist advisors are involved and further informed by specialized briefings.
S	• During the discussion groups, experiences and different opinions can be exchanged. This can give other participants new ideas or insights. • The farm visits are organised to give some specific advice on farm level.
E	
T	• The WaterProtect tool is an online application which maps all measurement results of the catchment in an accessible way.

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Ambition – Farmer practice: measures at farm level							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Information program		X				Farmers	Project partners

R	
E	• During the farm visits, the specific farm situation can be discussed and information about possible solutions/points of improvement can be given. • Farm walks create better engagement of farmers.
S	
E	
T	

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5.4 Italian action lab – Val Tidone

Ambition – Problem awareness							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Information sharing program		X	X		X	All actors (extra focus on researchers, farmers, farmers representative and farmers advisory)	Project partners

R	
E	• Newsletters were sent by post to the farmers in the catchment. This method was used to share information about the problem and the project. • Actors were informed by articles in the local newspaper and by the local project website. • One article concerning the water quality problem and the actions taken during the project was published in one national farmers' journal. • Meetings and demonstrations were organised in order to involve all stakeholders and share monitoring data. • Farmers and farmers advisory were directly involved in the monitoring of the water quality. • Posters and presentations were used to present the measures taken and the results of the action lab during international conferences. • Farmers' advisory groups used some project results in their official training courses (licences for pesticide handling) and meetings.
S	• Meetings and demonstrations were organised in order to involve all different stakeholders, to share monitoring data and to learn from each other.
E	
T	• The GIS platform facilitates the sharing of monitoring data between project partners.

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Ambition – Awareness on farmer practices							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Interactive information program	X	X				All stakeholders except the drinking water industry	Project partners

R	• A regulatory workshop was held in order to discuss the possibility of making policy more flexible and more stimulating to implement BMP's.
E	• Multi-actor conversations or meetings and demonstrations were organised to discuss the implementation of BMP's.
S	
E	
T	

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Ambition – Farmer practice: impermeable washing platform to collect waste water							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Creation of awareness		X	X			All stakeholders except the drinking water industry (main focus on farmers, farmers representatives and farmers advisory)	Project partners
Financing of the platform				X		Farmers	Project partners
Common use of the platform	X	X	X		X	Farmers	Project partners

R	• Project partners have tried to set up a voluntary agreement between the different actors involved in the use of a common platform. • Project partners collaborated with local authorities in order to overcome the legislative gap that exists for systems that threat the wastewater of washing platforms.
E	• Meetings and demonstrations were organised with several stakeholder categories (farmers, farmers' associations, farmers' organisations, farmer consultants) in order to inform them about the characteristics of the impermeable washing platform. • Brochures in Italian language were created and used to inform farmers about connected BMP's and MM's and the benefits of using them. • In order to show the use of the platform and the wastewater collection in real life, a pioneering farm was used as demo-farm. • Farmers who are using the same common platform can share their experiences with each other. In this way, the common use facilitates the knowledge transfer.
S	• The meetings and demonstrations bring different types of stakeholders together and enable stakeholders to share their point of view or experience.

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	• A pioneering farmer agrees to demonstrate the platform and the wastewater collection in real life (demo-farm). Unconsciously, this person has taken up a pioneering role. • The goal was to install a common impermeable platform that can be used by all farmers in the neighbourhood. This common use also has some social impacts on the farmers like for example an extension of their social networks.
E	• During the project, the project leaders tried to attract financial support for the construction of other platforms. Interactive meetings and workshops were held in order to discuss financing strategies.
T	• The construction of the platform facilitates the implementation of a good agricultural practice.

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5.5 Polish action lab – Gowienica river catchment

Ambition – Problem awareness							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Information campaign		X	X		X	All stakeholders	Project partners

R	
E	• During workshops for farmers and inhabitants, school lessons, agri-fairs and events, participants were informed about the water quality in the catchments, threats linked to a bad water quality and the consequential need to protect the water. • One meeting and different workshops were held at local meeting centres (club rooms, firehouses). • The project partners participated in local events like the agricultural fairs, school visits and events. During such events water from private wells were tested on the spot. • Meetings were held with the institutional stakeholders to increase the problem awareness of local and national authorities. • During the field visits, groups of actors could observe the problem in-situ. As a result, field visits had both an educational and a social character. • Newsletters were sent once a year to keep stakeholders informed about the project achievements and the planned workshops and meetings. • Five articles concerning the water quality problem and the actions taken during the project were published in the local farmers' magazine. • Leaflets were used to inform farmers about the nitrates in the groundwater, the project and the competences of institutions that are responsible for water management. • Workshops made it possible to share new information and knowledge.
S	• During the meetings the impact of water pollution on human health was discussed. The actual behaviour of some farmers is in contrast with the common interest of the community. This can put some pressure on the farmer, being a member of the group/community.

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	• Workshops were not only organised to share knowledge but also had a social impact as stakeholders get to know each other, share experiences with each other and possibly adjust their perspectives. • During the field visits, groups of actors could observe the problem in-situ. As a result, field visits had both an educational and a social character. • Field visits enabled both farmers and institutions to look at the problem from other viewpoints. Both actor groups got a targeted visit in order to discuss issues thoroughly within each group.
E	
T	• The WaterProtect tool is an online application which maps all measurement results of the catchment in an accessible way.

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Ambition – Implementation of BMP's							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Information campaign		X	X			All stakeholders (extra focus on farmers)	Project partners
Subsidies and funds				X		Farmers	Government (national level)
Structural cooperation				X		Farmers	Food producer: sugar company

R	
E	• Workshops were held to inform stakeholders about the range of possible BMP's and to encourage them to implement them. • Meetings were held with local leaders of the villages to inform them about the innovative solutions or BMP's. • Indoor trainings were held with farmers to promote the BMP's. • Brochures were used to inform farmers about the BMP's and the benefits of using them. • Five articles concerning the water quality problem and the actions taken during the project were published in the local farmers' magazine. • By visiting the demonstration farm (Juchowo farm), farmers were introduced to organic farming. In this way farmers were inspired by new methods and measures to protect the water quality.
S	• Workshops, demonstrations, meetings and indoor trainings also have a social character as they bring together several actors and make it possible to share experiences and points of view. Workshops and meetings were also important methods to involve local leaders.
E	• Farmers could rely on two funds, i.e., direct payments and the Rural Development Program, for adjusting their farm practices to the requirements of the programme of measures (PoM). • Both farmers and food producers benefit from cooperation. The sugar company obtains resources (sugar beetroots) of good quality and complying with their requirements. The farmers in turn have the certainty that their

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	product will be bought. As farmers are mainly focused on raising the profits, this income certainty will certainly motivate them. • Penalties for not fulfilling PoM's provisions. • Less subsidies if land is not in good agricultural condition, or if there is non-compliance with management standards and environmental requirements.
T	

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5.6 Romanian action lab – Mara river catchment

Ambition – Problem awareness							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Information campaign		X	X			All stakeholders including farmer representatives	Project partners

R	
E	• Project partners tried to involve farmers individually through surveys, bilateral conversations and farm visits. • The project partners organised interactive workshops, demonstrations, field visits and multi-actor conversations to ensure active sharing of information and experiences between the actors.
S	• The knowledge building activities and transfer methods (interactive workshops, demonstration, field visits and multi-actor conversations) have some social impacts like expansion of the social network of the farmers, social cohesion, social pressure and adjustment of the reference framework.
E	
T	

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Ambition – Farmer practice: manure storage systems for animal waste at individual level							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Information campaign		X	X		X	Farmers	Project partners
Fund				X		Farmers	Government (EU level + municipal level)

R	
E	• Leaflets with best management practices for manure were disseminated. • Project partners organised workshops, trainings, seminars and demonstrations about the manure storage system.
S	• Manure storage platforms were demonstrated to the farmers by the project partners. Indirectly this also has an influence on social factors like social cohesion, expanding the social network, adjusting the reference framework, etc. • Two farmers are planning to build some manure storage facility and thereby take up some pioneering role.
E	• Project partners investigated if EU funding might be available for the construction of the platforms. • Project partners investigated if local authorities could provide some funding for the construction of the manure storage systems at individual level.
T	Project partners are developing a model to design the manure storage systems and make a price estimation of it.

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Ambition – Water provision infrastructure (centralized sewage system, water treatment facilities)							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Information campaign		X				All stakeholders (extra focus on farmers)	Project partners

R	
E	• Project partners organised multi-actor conversations, symposiums, demonstration and field trips. In addition they also used some direct communication forms like bilateral conversations and surveys.
S	
E	
T	

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5.7 Spanish action lab – Lower Llobregat river

Ambition – Awareness about the regenerated water quality and the risks for agricultural use							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Information campaign		X	X		X	All stakeholders involved	Project partners

R	
E	• A newsletter was sent to everyone who showed interest in the project progress and results. • In the context of the regenerated water quality, a demonstration was held at the waste water treatment plant. • The GISEL tool stores all data about the water quality and quantity and is publicly accessible.
S	• Via interactive workshops, conferences, demonstrations and multi-actor conversations actors are brought together to share their knowledge and experiences. Indirectly this knowledge building and transfer methods have some social impacts, such as the expansion of the social network of the farmers, creating networks of knowledge and information transfer among farmers and technicians from public and private administrations, social cohesion, social pressure and adjustment of the reference framework.
E	
T	• The GISEL tool stores all data about the water quality and quantity.

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Ambition – Safe use of regenerated water in agriculture							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Sanitation safety plan		X				Farmers	Project partners + government (municipal and regional/national level) + farmers + famer trade union + ADVs + drinking water industry

R	
E	• Through multi-actor conversations a plan was developed that will ultimately guide the use of regenerated water in agriculture. • Bilateral conversations were held between research institutions and project partners in the exploratory phase, i.e. before the development of the plan. • Interactive workshops were organised to involve and inform a broader range of actors in the development process of the plan.
S	
E	
T	

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Ambition – Awareness about crop adaptation to the water quality							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Information campaign		X				Farmers	Project partners

R	
E	• Multi-actor and cooperative approaches were used to discuss the topic of crop adaptation to regenerated water quality. Examples are: multi-actor conversations, conferences, interactive workshops, demonstrations and field visits.
S	
E	
T	

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Ambition – Farmer practices: implementation of BMP's							
	Incentive mechanisms					Actor structure	
	R	E	S	E	T	Target group	Initiator
Decree + enforcement mechanism	X			X		Farmers	Local government (CPABLL) + government (regional/ national) + students + farmers
Information campaign		X	X			All stakeholders	Project partners
Financing				X		ADV's, project partners	Agrarian Park Consortium

R	• A conference was held on the introduction of a new decree regulating the maximum application of nitrogen and phosphorus, which will therefore reduce or prevent eutrophication.
E	• Workshops, demonstrations, field visits and conferences were organised to demonstrate the advantages of the practices. • Flyers were designed and distributed to promote the BMP's and involve actors in the project. • Bilateral conversations were held between project partners and research institutions.
S	• Workshops, demonstrations, field visits and conferences were organised to demonstrate the advantages of the practices.
E	• In the discussed decree, fees were proposed as enforcing mechanism. • The Agrarian Park Consortium gives financial support to the ADV's so they can perform their work with more resources. They also financed some conferences and field demonstrations and specific works to improve the water supply points for cisterns.
T	

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6 Conclusion

This report gives an overview of the different incentive structures that were used by the action labs to reach predefined goals and ambitions. It shows that many action labs focused their attention on awareness raising, whereas some action labs also could spend efforts on other types of incentives, such as the development of tools or financial incentives.

In order to draw conclusions and formulate some lessons learned, a cross-comparison between the action labs now has to be performed. Therefore deliverable 2.2 will be placed next to deliverable 2.3. This will allow to designate explanatory characteristics, i.e. context factors and action lab characteristics that explain why some action labs make more progress than others and why the same actions in different action labs sometimes result in different outcomes. Also the experiences of the action labs with the different incentive structures will be compared and assessed. All these insights will be bundled in Deliverable 2.4, which will serve as a guide or manual for managers of water catchments willing to work on the water quality in an environmentally and socially sustainable way.

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