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# 1 Introduction

The pressure on natural resources increases. The observation of a growing need to promote learning that will change the way we design our products, businesses, economies and society, resulted in the project Lessons from Nature. Lessons from Nature aims to provide secondary school students with an inspiring and hopeful image of the future and contribute to the development of competencies needed to rethink and redesign products and processes, inspired by nature.

The monitoring and evaluation process (M&E) of Lessons from Nature has been facilitated by Wageningen UR. This final evaluation report looks back at the project Lessons from Nature, guided by the question: To what extent did the project achieve its objectives? During the M&E process the main focus has been on the process. The midterm evaluation report describes this process more into detail. This final evaluation report will mainly focus on the project objectives

The timing of Lessons from Nature is very good. Societal attention for learning for nature in order to redesign products and processes is lively, present in different sectors, and still growing. This is reflected in the increasing attention for concepts like circular economy, blue economy and biomimicry. Many scholars argue that the complexity of sustainable development requires a system transition to radically change our way of designing economy and society. Participation in this transition requires new competencies. The modules and learning framework from Lessons from Nature offer students a new perspective to current sustainability challenges that stimulates them to explore new solutions for design questions, inspired by nature. The evaluation shows that after their participation in Lessons from Nature, students feel that we as humans can and should learn from nature. Furthermore the students and teachers are inspired by the opportunities looking at nature offers for concrete design challenges. Lessons from Nature is a complex concept. To really grasp this new way of thinking about processes and products takes time, both for students and teachers. For students it is easier to understand aspects of LfN, for instance concrete examples of concepts like biomimicry and circular economy, than the integral underlying LfN vision. Lessons from Nature helps students and teachers to explore new approaches to sustainability challenges and develop competencies to address the complexity of sustainable development.

## 2 Monitoring and evaluation approach

The monitoring and evaluation process has been a combination of formative evaluation (to learn and improve the process and programme) and summative evaluation (to judge the overall value). The external evaluator facilitated this process .

The following key characteristics of the monitoring and evaluation process were defined at the start of the process:

- The M&E approach has an emergent design in order to be able to respond to emergent issues.
- Reflection is an important part of the M&E process. Thus the process can become a pedagogical tool that enables participants to become more reflective about what they are doing, how they work and how they can improve the way they are working.
- The input of the partners is very important during the design of the M&E approach.
- We strive to optimally embed monitoring and evaluation activities into the project.
- An important ambition, shared by the project team and the external evaluator, is to make the evaluation meaningful, both for the project team members and for the learners. The ambition is to use evaluation methods which enhance the learning process of the pupils and teachers, and at the same time offer the project team useful and inspiring results to address the evaluation purposes.
- Flexibility in the evaluation process regarding the issues addressed: open mindedness, expecting the unexpected and looking for surprise and patterns.

### M&E activities

Monitoring and evaluation has been addressed at different moments during the project Lessons from Nature.

M&E session, meeting 2	This session has been used to think collectively about the M&E process, in order to develop an evaluation framework that is closely linked to the ideas and ambitions of the project team members. Ambition statements have been formulated (appendix 1). The intended use of M&E results has been discussed. Project partners have thought about signals that will indicate whether the ambitions have been realized. The results of this session have been used to develop the M&E approach (appendix 2 and 3) and to identify key challenges (appendix 4) to be addressed during the project.
Reflection questions, prior to meeting 3	Project partners received a set of questions to stimulate reflection about the project, and in particular about the period between meeting 2 and 3. They answered these questions individually or per country. The answers have been used as input for the M&E session during meeting 3.
M&E session, meeting 3	This session has been used to further develop a common understanding about LfN through comparing the different expressions of Lessons from Nature in one sentence (appendix 5). The challenges identified after meeting 2 and possible strategies to address these challenges have been discussed. The second part of the meeting has been used to think of ways in which evaluation can be integrated into the learning activities.

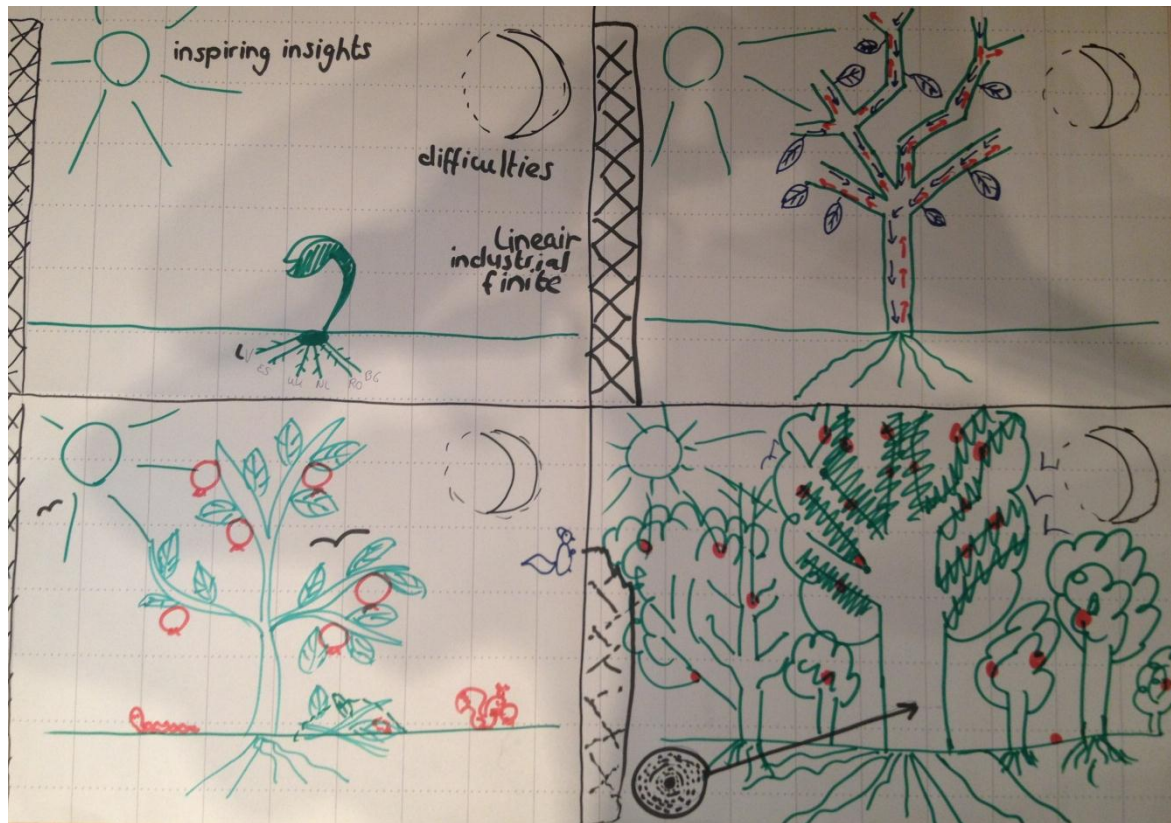
M&E session, meeting 4	Project partners discussed how they will provide evidence of project success and reviewed a number of ways by which they can collect evidence of success.
M&E session, meeting 5	The session has been used to look back and to look forward. Project partners reflected on the questions: What are you proud of? What inspired you? Do you observe a change in yourself? What went well? What went different than you expected? Unexpected results? What was the biggest challenge for you? Eye-openers, learning moments? Results from these reflections have been used to draw a map of the Lessons from Nature process from the start until the end (see pictures on pages 5 and 6). The second part of the session has been used to share plans, ideas, ambitions and dreams with regard to the future of Lessons from Nature(See figure next page).

Data has been collected in different ways:

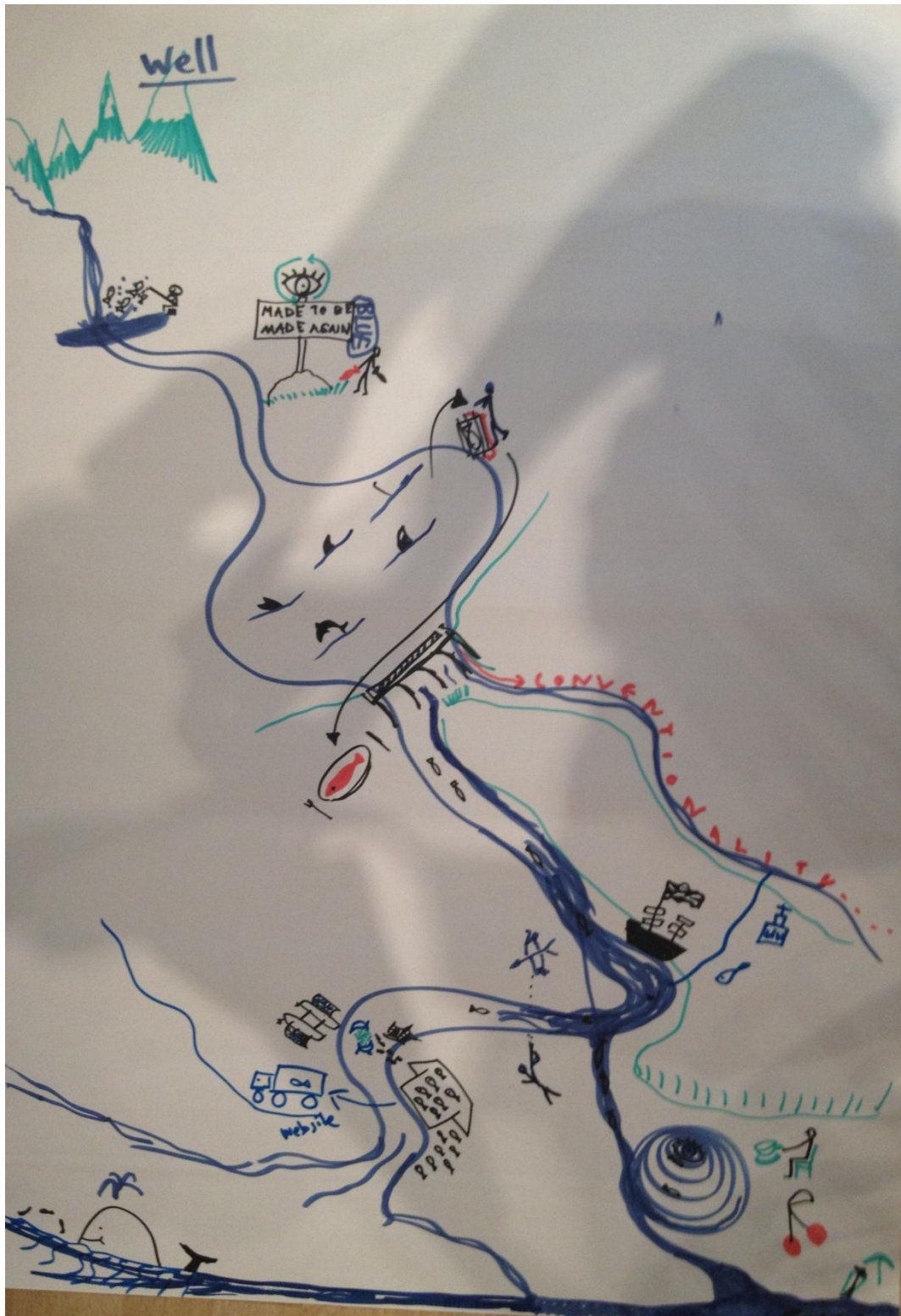
- During partner meetings 2, 3 and 5 a monitoring and evaluation session has been facilitated. Project partners' input has been recorded on flipcharts (for examples, see pages 5 and 6) and by making notes. During the rest of the meeting the group process has been observed and notes have been made.
- In the month before partner meeting 3 a list of reflection questions has been sent to the project partners to stimulate them to reflect on the process so far. These questions have been answered by six project partners individually; four countries have given collective answers.
- Before the final meeting project partners were asked to prepare a comprehensive report about their project activities, including evidence that supports the project outcomes.
- Review of project documents on Huddle.



What are you proud of? Results from M&E session, final Partner Meeting



Roadmap LfN, final Partner Meeting



Roadmap LfN, final Partner Meeting

### 3 Objectives

This chapter describes the extent to which the project has succeeded in achieving its different objectives.

#### **Objectives Lessons from Nature**

1. Improve the capacity of schools and organisations working with young people to address sustainable development through the outdoor classroom in new and innovative ways, and integrate this into different curriculum areas.
2. Provide young people with a wide range of experiences outside the classroom relevant to their participation in building the green economy and society.
3. Produce new resources that link learning about natural ecosystems with the skills for building a green economy and society.
4. Provide easy access to information, knowledge, expertise, guidance and resources.
5. Share and enhance existing criteria for successful LOtC.
6. Develop a network of good practice amongst educators to continually share ideas and resources.
7. Increase the profile of sustainable development and LOtC across the partner countries and the EU.

#### **Objective 1**

**Improve the capacity of schools and organisations working with young people to address sustainable development through the outdoor classroom in new and innovative ways, and integrate this into different curriculum areas.**

Lessons from Nature aims to provide schools and teachers with an innovative way to address sustainable development. According to the project partners the materials will be innovative when they have the following characteristics:

- The materials are critically distinct from environmental education (EE) and education for sustainable development (ESD).
- The learning modules are student-centred and approach-based.
- They inspire students to dream about their future.

*Are the materials critically distinct from environmental education (EE) and education for sustainable development (ESD)?*

Teachers' opinions are the best source to evaluate whether the materials are critically distinct from Environmental Education (EE) and Education for Sustainable Development (ESD). However, there is limited evidence about this particular question. Teachers' general feedback about the modules shows differences across countries. For Romanian teachers the materials are definitely innovative, according to Romanian project partners. Moreover, they observe that most teachers have no idea about EE and ESD. Also quotes from teachers from other countries point in the same direction. In



general, students will not be able to judge whether materials are critically distinct from EE and ESD. However, a Dutch student mentions in the evaluation form that the project is more beta-minded than expected.

Looking back at the process of Lessons from Nature, it is clear that for the project partners Lessons from Nature entails a new approach compared to activities and methods commonly used in EE and ESD. The principles of Lessons from Nature offer a new perspective to current sustainability challenges, e.g. 'closing the loop' instead of recycling and changing design processes instead of changing human behaviour (towards more environmental friendly behaviour). Results from the meetings show that the project partners have gone through a process of reframing their ideas with regard to sustainable development. The project partners experience Lessons from Nature as critically distinct from EE and ESD.

When looking at the modules, the elements of the modules are often similar to EE and ESD activities. However, the focus underlying the materials is different and offers a new system approach that goes further than recycling. The LfN modules are distinct in the sense that they focus on design. In this way they offer a complementary and new perspective to EE and ESD.

*Are the learning modules student-centred and approach-based?*

Lessons from Nature offers a student-centred approach and approach-based framework, including student-centred assessment methods such as reflection questions and learning walls. The concept of competency has been used as a guideline to develop student-centred learning materials. In some of the countries student-centred and approach based education implies a shift in thinking and teaching among both educators and students.

*'Indeed, our school is "old fashion". We understand this better by working in this project and experiencing new, innovative methodologies. Our children need this kind of approach to understand better the problems of actual world. I hope this project will be continued and the methodology will be extended countrywide.'*

Romanian teacher

In the UK and the Netherlands teachers and students are more used to students-centred and approach-based methods. The Dutch modules are approach based, requiring active participation of students, co-operation, a constructive approach, purpose and self-control (report by Dutch project partners). In other countries working with student-centred and/or approach based methods is more challenging for teachers. In Spain teachers are not comfortable with the new way of working. According to Spanish project partners, the teachers are not used to competence-based working. The learning walls did not work well as expected; students had problems using them. Also for Romanian teachers the learning walls are unusual and difficult to use. Competence is a new concept for them. In Bulgaria the learning walls are not used. In the UK project partners observe that students tend to overestimate their competencies. This is an indication that students need to learn how to assess their own competencies. In general it is difficult to predict whether in the future teachers will use the learning walls as an integral part of Lessons from Nature; will they use the learning walls or leave them out? We can conclude that LfN offers them a new student-centred, approach-based way of

working. For some countries it will take more time and effort to get used to this way of working than for others.

*Do the learning modules inspire students to dream about their future?*

To inspire students to dream about their future has been an important motive for all project partners. The student evaluation (i.e. reflection questions) does not include a specific question about whether the module has inspired students to 'dream'.

According to the Dutch project partners some students start dreaming without boundaries, thus losing reality; while for other students it is difficult to start dreaming. The majority of remarks in the evaluation forms from Dutch students doesn't refer to dreaming about the future. Some remarks refer to experiences which could be related to dreaming. E.g.

*Lessons from Nature means to me...  
'improving the world by taking ideas from nature'*

*When working on LfN I felt...  
'creative'*

Answers to reflection questions, Dutch students

In the UK evaluation questions the phrase 'I was inspired by...' may be the closest to 'dreaming'. However, looking into their answers, the comments show that 'dreaming' is quite different from 'being inspired'. Students' comments show that they have been inspired by nature. These comments refer to the experience of nature that has been offered during the modules.

The Romanian modules focus not so much on redesigning our vision on the future, but more on designing small-scale products, such as earrings and bird-nests from pet-bottles. They are not about redesigning or rethinking underlying systems.

To conclude, the question: What future do you want? has not been addressed specifically in the modules. How to stimulate and facilitate students to dream about their future remains a challenge and an interesting point of attention for the future.

*Does Lessons from Nature improve the capacity of schools and organisations working with young people to address sustainable development through the outdoor classroom in new and innovative ways, and integrate this into different curriculum areas.*

Yes, Lessons from Nature offers new and innovative approaches to address sustainable development. The modules can be integrated into different curriculum areas. However, in the Netherlands and the UK teachers are not enthusiastic about the cross-curricular dimension. In these countries it is difficult to fit cross-curricular projects into the curriculum. A quote from a Romanian teachers shows a very different opinion.

*'I'm a language teacher and I was thinking that the environmental problems are in the charge of the nature sciences teachers. By this project I understood that everybody is responsible for the future and I can involve my students in activities concerning environmental problems.'*

Romanian teacher

## Objective 2

### **Provide young people with a wide range of experiences outside the classroom relevant to their participation in building the green economy and society.**

Experiences outside the classroom are present in the majority of models. How experiences outside the classroom are integrated into the modules differs across countries. Nature experience activities are present in all UK models. According to the Dutch project partners it is a challenge to integrate Lesson from Nature with Learning outside of the Classroom. They feel it is difficult to link Lessons from Nature to experiences outside. When you do this it quickly starts to resemble environmental education. It is difficult to select suitable outdoor activities, without falling back into 'traditional' outdoor activities. An additional challenge is that teachers skip the outdoor part.

The connection between the outdoor, nature-based learning experience and young people's participation in building the green economy and society has been a key element that required explicit attention throughout the development of the modules. Some answers from students show that the connection between learning from nature in order to design our future is a key insight they have gained through Lessons from Nature, other evaluation forms don't show any reference to the connection between LfN principles in nature and using these to redesign their own world. E.g., UK students' evidence about the link is much stronger in the questionnaires from the trial phase than in the answers to reflection questions from implementation phase.

I discovered:

*'Technology has similar aspects to nature'*

*'That trees are resourceful and that we could be more creative'*

*'The fact that trees have multiple purposes and we can create multi-purpose products'*

Notes on how this learning could impact my future:

*'So the next generation can see the old trees & vegetation'*

*'How to recycle'*

*'Nature is important and recycling and not harming nature is good for us as well'*

*'We need to reduce resources'*

*'Do more recycling to make more use of things'*

*'Humans need to learn from nature'*

LfN personal reflections, Students UK

The quotes from Romanian students focus mostly on the importance to protect nature, they don't address the link to designing the society. However, the love, appreciation and respect that is reflected in these phrases is also very important in moving towards a green society.

*'The nature represents inspiration, purity and silence.  
The nature is the tree of life! Let's protect it.'  
'The best way to protect the nature is the prevention.'  
'Everything what we are using in our life has the origin in the nature, so it's important to return to the nature.'  
'It's important to live in harmony with the nature, our life depends on this.'  
'it's important to protect the nature not only for us but also for our children. We have to work together for this.'  
'The nature is the best thing what we get forever; we have to appreciate very much.'*

Quotes from Romanian students

### **Objective 3**

**Produce new resources that link learning about natural ecosystems with the skills for building a green economy and society.**

The modules show that this objective has been reached. In total 32 modules have been developed, based on the LfN principles (Waste equals Food, Multiple Benefits; Run on Solar Income; Diversity gives Strength; Nature optimises; Nature is Adaptive, Dynamic and Responsive) and the LfN learning framework (inspire, discover, understand, apply). For thoughts about the link between learning about natural ecosystems and the skills for building a green economy and society, see previous section.

### **Objective 4**

**Provide easy access to information, knowledge, expertise, guidance and resources.**

The Lessons from Nature website has been developed to achieve this objective. Furthermore, different countries have developed short videos to support teachers in using Lessons from Nature (Bulgaria, Spain, Romania). In Latvia a teacher support structure was set up, including a study-circle method, regional consultations, e-mail consultations and a social website gallery. The opinion of teachers about how easy it is to access information, knowledge, expertise, guidance and resources has not been evaluated systematically.

### **Objective 5**

**Share and enhance existing criteria for successful LotC.**

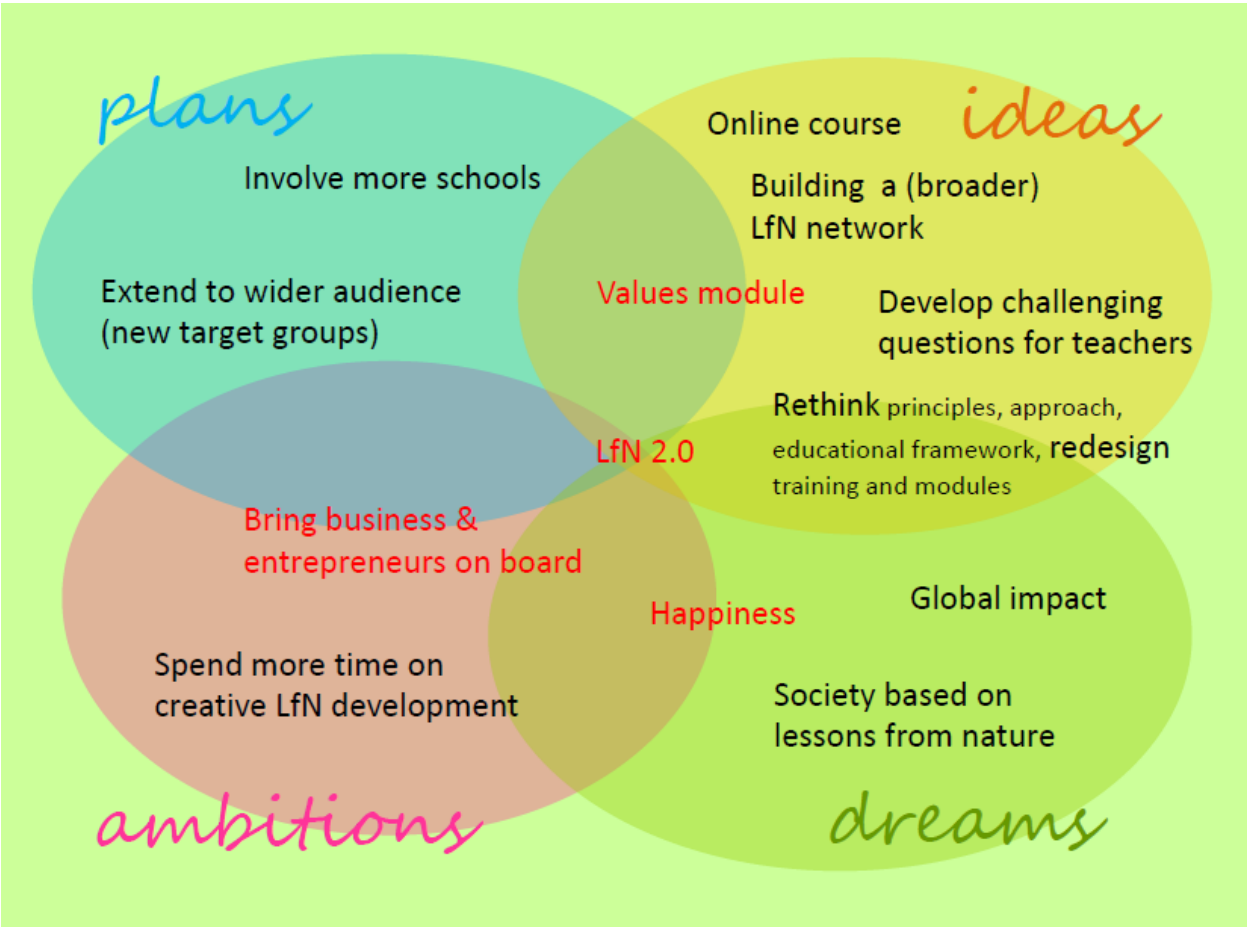
This process has taken place on partner level. During the final project meeting an extensive discussion took place, in which project partners critically reflected on the relationship between Lessons from Nature and Learning outside of the Classroom (LotC): How does LfN enhance LotC? How does LotC enhance LfN? This process – in which the different countries shared their ideas – is a

way to collectively enhance existing criteria for successful LfN (See appendix 6 for the results of this process). Partners have not reflected on the question to which extent LfN has influenced their own criteria. Only the UK has formal criteria for LotC. This process has not influenced the UK national standards. This question has not been addressed in teacher focus groups and questionnaires.

**Objective 6**

**Develop a network of good practice amongst educators to continually share ideas and resources.**

A network among project partners has been set up. The last partner meeting showed a strong motivation to continue working together and to explore the possibility of LfN 2.0. The picture below summarizes common ideas, visions and ambitions with regard to the future of LfN.



*A summary of plans, ideas, ambitions and dreams, related to the future of LfN, final Partner Meeting*

To develop a network of good practice among educators will remain a challenge. Some of the partners have set up social network sites for LfN, these will need to be actively used and maintained. In the Netherlands and the UK it is difficult to actively engage teachers. Only few teachers want to participate actively and no active teacher networks exist. In the Netherlands it is always difficult to reach secondary school teachers, and also in the UK teacher commitment is difficult. The existing teacher network in Bulgaria is not very good, according to Bulgarian project partners. Therefore it is difficult to establish a network of good practice. Romania has a strong network which offers opportunities for the future and also in Latvia many schools are involved. The Spanish network

STERM is a teachers union which ensure good links to the teacher. To have a network that continually shares ideas and resources is given the current economic and political situation still a challenge.

### **Objective 7**

#### **Increase the profile of sustainable development and LOtC across the partner countries and the EU.**

Through the developed modules and the teacher trainings, LfN has increased the profile of sustainable development and Learning outside of the Classroom. The Timing of Lessons from Nature is right. Societal attention for learning from nature (circular economy, blue economy) still grows, which offers promising opportunities for expanding Lessons from Nature. Lessons from Nature stimulates teachers to rethink sustainability, and thus helps to increase their understanding of sustainable development.

## Appendix 1: Ambition statements

During partner meeting 2 project team members formulated their personal ambition statements and shared these within the group. These personal ambition statements have been clustered and are presented below.

<i>For me this project will have been successful when after 30 months...</i>
We have a clear and simple message. Members of the project team and teachers are able to explain Lessons from Nature in one sentence.
This message is exciting and hopeful. It challenges and inspires students to rethink their future and stimulates their imagination. The programme also challenges teachers and creates enthusiasm to explore.
We have developed good learning materials and we can provide good examples for students and teachers.
Teachers want to participate. Many students are involved.
The programme is successful and appreciated. Teachers are enthusiastic and want to continue: 'I get 1 call a day from teachers who want to be involved in Lessons from Nature'. Developed materials continue to be used.
The project team members themselves are enthusiastic: 'I am enthusiastic to continue with work and members. The outcomes excite me.' They are able to convince colleagues.
Lessons from Nature is linked to the formal curriculum and teacher training programs. The programme has an impact in the educational community.
Lessons from Nature starts a movement. A critical mass is reached. More students are engaged in sustainability issues or sustainability organizations.

## Appendix 2: Summary of M&E process

Purpose of the evaluation	<ul style="list-style-type: none"> <li>▪ Accountability towards EU and own organisations</li> <li>▪ Improving the process, learning from experiences</li> <li>▪ Sharing inspiring results</li> </ul>
Key evaluation areas and questions	<p><b>Process</b> Project team members are enthusiastic and excited (throughput).</p> <hr/> <p><b>Effectiveness</b> To what extent has the programme attained its intended objectives:</p> <ul style="list-style-type: none"> <li>▪ A clear and simple message (output)</li> <li>▪ Activities are fun, exciting, challenging and inspiring, both for students and teachers (output).</li> <li>▪ Materials are used, teachers attend training (output).</li> <li>▪ Process: Are we doing things right? Have the planned purposes, outputs and activities been achieved? Why or why not? To what extent has the programme attained its intended objectives?</li> </ul> <hr/> <p><b>Impact</b> To what extent has the programme contributed towards its longer term goal: learning that contributes to the potential of societal change? Will there be continued positive impacts as a result of the programme once it has ended? Why or why not?</p>
Primary intended users and use	<p><b>Primary intended users</b> Programme managers, project team members and partners, EU</p> <hr/> <p><b>Intended use</b> Project team and partners:</p> <ul style="list-style-type: none"> <li>▪ In order to improve the process and learn from experiences.</li> <li>▪ Project team may change the programme based on results M&amp;E.</li> <li>▪ To involve teachers.</li> <li>▪ Accountability towards EU.</li> <li>▪ Results can influence gatekeepers.</li> <li>▪ Results M&amp;E will have consequences for project team and partners when looking for new projects after LfN.</li> </ul>
Baseline data	Baseline research from partners.
Key information needs	<p>For example:</p> <ul style="list-style-type: none"> <li>▪ Insight in the opinion of students and teachers. How do they experience the activities? <ul style="list-style-type: none"> <li>- Is the message clear and simple according to students and teachers?</li> <li>- How do students and teachers value the Lessons from Nature activities. Are the activities exciting, challenging and inspiring. Why or why not?</li> </ul> </li> <li>▪ Number of students and teachers participating in the programme.</li> </ul> <p>A more elaborate description can be found in the evaluation framework (chapter 6).</p>
Data gathering; Methods and sources; Responsibilities	The evaluation framework (chapter 6) describes methods of data gathering and responsibilities. Some methods of data collection still need to be defined.



## Appendix 3: Monitoring and evaluation framework

EVALUATION FRAMEWORK				
<i>Level</i>	<i>Subjects and questions</i>	<i>Results M&amp;E, example indicator</i>	<i>Method</i>	<i>Responsibility</i>
<b>Input</b> Societal context and issues; the means	The pressure on natural resources increases. Project partners observe the need to make significant changes in the way we live and consume, and move towards a more sustainable lifestyle. There is a growing need to promote learning that will change the way we design our economies, businesses, products and the way we live our lives.	-	-	-
<b>Throughput</b> Processes	Project activities, cooperation between partners. <ul style="list-style-type: none"> <li>▪ Do project team members co-create a common vision?</li> <li>▪ How do project team members deal with identified challenges?</li> <li>▪ Are project team members inspired and challenged?</li> </ul>	Result: Description how project team members deal with identified challenges (dynamic learning agenda).  Example indicator: Project team members are able to explain LfN in 1 sentence.	Dynamic learning agenda	Anne: Facilitates sessions, coordinates <u>dynamic learning agenda</u> .
<b>Output</b> Deliverables: the products and direct effects of the project	<ul style="list-style-type: none"> <li>▪ What products have been developed?</li> <li>▪ What kind of learning activities have been initiated?</li> </ul>	Overview		Project team members / coordinator
	<ul style="list-style-type: none"> <li>▪ A clear and simple message</li> </ul>	Result: The clear and simple message  Example indicator: <ul style="list-style-type: none"> <li>▪ Project team members are able to explain LfN in 1 sentence.</li> <li>▪ Partners wear a T-shirt with the message during</li> </ul>		Project team members / coordinator

		meeting 3 or 4, in this way they show the spirit of embodying the message.		
<b>Outcomes</b> Short term results of the output	Quality of learning, motivation and satisfaction of learners and teachers. <ul style="list-style-type: none"> <li>How do they experience the activities?</li> <li>How are products and knowledge used by participants?</li> <li>Are activities embedded?</li> <li>Do we signal changes?</li> <li>Do the participants themselves observe change in themselves, in others and in the organizations and networks to which they belong?</li> </ul>	Results: M&E activities are integrated into project activities. Reflection/evaluation as part of activities thus serves a double goal: personal reflection in order to deepen learning + production of results for M&E.  Example indicators: <ul style="list-style-type: none"> <li>Teachers are able to explain LfN in 1 sentence.</li> <li>Social media attention.</li> <li>Diversity of ways in which students express Lessons from Nature</li> </ul>	Possible method: Most Significant Change method  How we will do this is not clear at this moment as activities are not yet developed: focus of next meeting	Project team members facilitated by Arjen and Anne (advice, feedback, in between and during meetings)
	Quantitative results <ul style="list-style-type: none"> <li>Number of educators, students and institutions involved</li> <li>Number of learners using the resources</li> <li>Number of schools/teachers taking young people outside the classroom</li> <li>Number of teachers involved in training</li> <li>Insight into social media attention</li> </ul>	Overview		Project team members (country coordinators) / programme coordinator
<b>Impact</b> Results on the long term, related to societal issue which is addressed	<ul style="list-style-type: none"> <li>Have conditions for impact been created?</li> <li>Will project partners continue their cooperation?</li> <li>Are there indicators that the results contribute to the societal issue at stake?</li> <li>Are there indicators that the results contribute to a societal change</li> </ul>	Results: Not yet defined.  Example indicators <ul style="list-style-type: none"> <li>Other teachers, countries are enthusiastic and want to teach LfN: phone calls, questions.</li> <li>Social media attention continues or grows.</li> <li>New projects</li> </ul>		Final meeting

## Appendix 4: Challenges

### Challenges

1. Most teachers are not prepared for an uncertain future. With Lessons from Nature they move from certainty and predictability towards uncertainty and unpredictability, and thus lose control. Lessons from Nature implies a changing role of the teacher: towards facilitator, coach, trainer. How can we address this in the design of our activities and trainings? How can we prepare teachers to deal with uncertainty and unpredictability in a positive way?
2. How can we find the balance between being open, adaptive and experimenting on the one hand and searching for a common framework on the other hand? Project team members feel the hesitation to narrow down or to be restrictive versus a desire for a certain degree of commonness. For them the programme is an exercise in dealing with uncertainty too. How can they balance the two: 1) being open and 2) finding a common framework?
3. Framing. Choosing the right words is crucial. How can we frame our message: How can we express a message that is positive and simple, critically distinct from EE, ESD and also suits the different contexts in the six countries?
4. Can we integrate reflection in our learning activities, in such a way that it 1) enhances the learning process of the individual students and 2) serves to collect data for monitoring and evaluation? Reflection is usually skipped. Can we design the activities in such a way that we can use the results to show the expected impact of our learning activities?
5. Where do values come in? In what way will we address values in the project activities?
6. To translate LfN into students' language, make it simple and understandable
7. To be completely original, innovative, creative, to think outside of the box
8. From content-based education to competency-based (approach-based) education.

## Appendix 5: Lessons from Nature in one sentence

To have a clear and simple message is a desirable result (output) of the project Lessons from Nature. One of the indicators: Partners wear a T-shirt with the clear and simple message on meeting 3 or 4. In the month before meeting 3 participants were asked to describe Lessons from Nature in one sentence. During meeting 3 the partners again described Lessons from Nature in one sentence. Their answers are presented in the table below. Towards the end of the project consensus was reached about how Lesson from Nature best can be described in one sentence:



*Project partners wearing their LfN T-shirt during the final Partner Meeting*

*Ambition*

A clear and simple message:

We (project partners) and the teachers are able to explain the message in 1 sentence.

*Level*

Output

*How will we know that we have been successful?*

- It is popular.
- It is honest and sincere.
- It shows ownership, it is close to the people.
- Media coverage.
- Our close friends + other social groups are interested in our work.

*How can we show that we have been successful?*

- Partners wear a T-shirt with the clear and simple message on meeting 3 or 4.
- Our product is merchandized.
- We see our poster in schools.
- We are invited to conferences (or we invite ourselves).
- Promotion, sharing results
- We feel confidence and pride.
- The number of schools
- Online, networks, social media

*Indicators formulated during Partner meeting 2*

*How would you at this moment explain Lessons from Nature in 1 sentence?*

- LfN is an educational tool for changing our dying and unsustainable economic system into a new one that could work within the limits of the planet.
- To discover, learn and show others the way, how we can live from now in harmony with nature.
- Using insights from nature (closed loop systems with diversity and multiple benefits) to find sustainable production systems to meet the needs of future generations.
- Learning how to reconcile human and natural functioning.
- To light up reflexion on how nature can guide us to improve our human learning approach and contributing somehow to solve a bit this messy 'unsustainable', non-natural system.
- Nature in its long history has found the best solutions for different problems, that's why nature is the best teacher. Humans have to find and use the wisdom of nature.
- In a rapidly changing world LfN enables students to research, debate, evaluate, and judge for themselves the relative merits of contesting positions to enable them to shape their own 'Bright Green Future'.
- Life is full of mysteries...
- A way to achieve and sustain the future we want, which truly inspires and is inclusive.
- LfN are representations of how nature works (as a system), how and what we can learn from it to improve our quality of life and how we can use it to safeguard the eternal source of life on the planet Earth.
- Observe natural processes and try to find new solutions with 0 energy and 0 pollution.

*Lessons from nature in one sentence, November 2011*

*Formulated by project members prior to session 3*

*Lessons from Nature in 1 sentence?*

Lessons from Nature:

- Using insights from nature to inspire re-design of systems to achieve the aspirations of new generations.

- Inspire your future.
- Solutions from nature for a sustainable future.
- Inspiring students to change their future.
- Inspires for new solutions.
- Inspire by nature wisdom, light up a rapidly changing life.
- New solutions for quality life
- Changing education systems using insights from nature as the way to achieve the desired future.
- School astronauts: naturally inspired, connected to future
- A tool that enables us to observe and reflect upon the world, in order to improve our ways of life

*Lessons from nature in one sentence, December 2011  
Formulated by project members during session 3*

## Appendix 6: The relationship LfN - LotC

### **LfN enhances LOtC**

- LfN enhances LOtC by providing a more meaningful focus and a purpose for the learner.
- Knowledge acquisition is framed to promote and understand whole natural systems and linking with/to human systems (social/economic).
- LfN provides a more systematic and holistic approach to LOtC.
- Usually LOtC is focussed in subjects like biology, natural science, ecology. LfN brings more subjects to LOtC and offers more opportunities to connect to: economy, design, arts and technology.
- LfN is an extra motivation to overcome obstacles.
- Students are motivated to go out with LfN to discover, understand, experience and apply.
- Links with the real world and real-life on economical and social issues, either through direct experience from nature or being outside the classroom.
- LFN provides examples for LOTC.
- Opportunity to link and inspire with technological processes.

*Result Partner meeting 5*

### **LOtC enhances LfN**

- Enhancing through the learning environment.
- Enhancing through the learning process.
- Enhancing through the teaching process.
- Promotes visits in nature.
- Promotes more sensual activities.
- Allows for activities with limited resources and time (nature abundant with materials).
- Allows different (organisation of) activities.
- Learning is more relaxed and natural and thus more focused.
- The ideal classroom/playground/lab/toolbox... for LfN is outside. LfN is designed mainly to be run outside, in nature.
- Nature's principles are primary... provide a measure for human designed systems.
- Start anywhere outside, managing the learning process makes the difference (Nature principles).
- LfN is not only about biomimicry. Designing a product by copying nature is not necessarily sustainable. LfN focus on how nature works. In processes rather than products.
- Learning in nature gives the opportunity to feel, not only to learn or understand. There is a great difference between watching a picture of a landscape and being in that landscape: breathing, smelling, touching, feeling small... Strong feelings reinforce learning processes.
- Find examples of circular economy in real-life and nature.
- Part of the LOtC activities are outside and can help understanding LfN.
- LOtC is an open lab, open to constant change and is circular.
- Real life experience is basis for thought process.
- Very powerful learning environment.
- Offers new examples and situations how nature work.

*Result Partner meeting 5*

### **What has worked well?**

- A combination between outdoor and indoor educations. LOtC doesn't mean forgetting about the common classroom. There are some activities better developed inside (videos, web...). Some activities cannot be done 100% outside.
- Going outside to find solutions, without approaching the problem too biologically

*Result Partner meeting 5*

### **What can be added?**

- Would be interesting to open it to subjects like physics or speak directly about "blue economy".
- Probably it would be helpful to remove the traditional "nature" label, understood like nature sciences only. That's difficult because of the inertia of the concepts in society. It may take years.
- More link with real life and entrepreneurship.
- Relate LfN with values. Even if the value is consumerism, the currently approach does work. For example you may want a new and bigger car. If the "blue/circular economy" can provide you in a sustainable way, that's fine, but not fair. A different approach would be, for example: I value freedom to travel. How could I explore the way to do it in a diminishing fossil fuels scenario?
- A values focus

*Result Partner meeting 5*