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EVALUATING EUROPEAN UNION FUNDED PROJECTS

– Case MINWA

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EU-RAHOITTEISTEN PROJEKTIEN EVALUAATIOSTA - CASE MINWA

Evaluaatiot ovat nykyään arkipäivää. Julkisin varoin rahoitettujen toimintojen, hankkeiden ja rahoitusohjelmien onnistuneisuutta arvioidaan yhä enemmän sekä niiden ollessa vielä käynnissä että niiden päätyttyä. Erinäiset arviointiprosessit ovat oleellisia julkisen rahoituksen legitimiteetin ja yleisen hyväksynnän vuoksi. Onkin tunnustettu, että julkisen rahoituksen suuntaamista tulee ohjata tulosten perusteella ja tuloksia mitata systemaattisesti.

Euroopan unioni rahoittaa vuosittain tuhansia hankkeita. Evaluaatiolla EU:ssa on oma metodologiansa ja kriteerit, joita tulee noudattaa EU-varoin rahoitettuja ohjelmia tai hankkeita arvioitaessa. EU-evaluaatiossa arvioidaan täten joko käynnissä olevien tai jo päättyneiden hankkeiden ja ohjelmien oleellisuutta, saavutuksia ja onnistuneisuutta.

MINWA (Jätevesipäästöjen vähentäminen haja-asutusalueilla) on kolmivuotinen (2009-2012) Viro-Suomi yhteistyössä toteteutettava, EU-rahoitteinen hanke, joka sai 75 % rahoituksestaan Euroopan aluekehitysrahaston Central Baltic INTERREG IVA –ohjelmasta. Tässä opinnäytetyössä arvioidaan MINWA-hankkeen onnistumista kahdesta erillisestä mutta toisiinsa kytkeytyvästä näkökulmasta: Miten hyvin hankkeessa on onnistuttu saavuttamaan hankehakemuksessa asetetut tavoitteet, ja vastaako MINWA-hankkeen toteutus rahoitusohjelman tavoitteita.

Opinnäytetyössä edistetään täten EU-ohjelmien evaluaatiotutkimusta yksittäisen projektin näkökulmasta. Toisaalta opinnäytetyössä käsitellään varsin päivänpolttavaa aihetta eli jätevedenkäsittelyä haja-asutusalueilla Suomessa ja Virossa. MINWA-hankkeen onnistuneisuutta arvioidaan soveltaen Euroopan komission määrittämiä kriteerejä: oleellisuutta, tehokkuutta, tuloksellisuutta, vaikutusta ja pysyvyyttä. Arviointiin sisällytetään kriteereihin pohjaava suoriutumisluokitus sekä yksityiskohtainen selostus kunkin tavoitteen toteutumisesta sekä mahdollisista eroavaisuuksista tavoitteiden ja tulosten välillä. Tämä hankkeen sisäisen evaluaatio oli hankehenkilöstön tilaama.

Yleisesti voidaan todeta että MINWA saavutti asettamansa tavoitteet tyydyttävästi sekä Suomessa että Virossa. Ainoastaan hankkeen vaikutusta ja pysyvyyttä oli vaikea arvioida vakuuttavasti näin lyhyellä aikavälillä, vain neljä kuukautta hankkeen päättymisen jälkeen. Hanke oli ehdottoman oleellinen omalla toiminta-alueellaan ja huolimatta etenkin Suomessa kohdatuista vaikeuksista toteutuksen suhteen onnistuttiin hankkeessa pääsääntöisesti toteuttamaan suunnitellut toiminnot ja saavuttamaan halutut tulokset.

ASIASANAT:

arviointi, EU-ohjelmat, jätevesi, haja-asutusalueet

BACHELOR´S THESIS | ABSTRACT

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EVALUATING EUROPEAN UNION FUNDED PROJECTS - CASE MINWA

Evaluations are nowadays the norm as almost all types of public policies, activities and programmes are subject to assessment during or after their course. Different procedures of assessment are necessary for ensuring that public expenditure gains legitimacy and public acceptance. Public policy and spending should thus be steered by results and these results be measured systematically and analytically.

The European Union provides funding for thousands of projects each year. Being a very case in point for public policy evaluation, evaluation in the EU follows certain methodology and criteria characteristic to European funded programmes. Evaluation in the European Union can thus be deemed an enterprise to assess the relevance, performance and success of ongoing and completed projects and programmes.

MINWA (Minimization of Wastewater Loads at Sparsely Populated Areas) is a three-year (2009 – 2012) Finnish-Estonian cooperation project, which received 75 % of its funding from European Regional Development Fund, channeled through the Central Baltic INTERREG IVA Programme. In this thesis the success of MINWA project from two interrelated points of view is evaluated: from both the attainment of project goals as stated in the project application and the accomplishment of ERDF/INTERREG IVA program priorities.

The thesis contributes to the study of EU programme funding evaluation as seen from a particular project point of view. On the other hand, the thesis addresses the subject area of wastewater management in sparsely populated areas in Finland and Estonia. The success of the project is assessed applying criteria defined by the European Commission: project relevance, efficiency, effectiveness, impact and sustainability. An overall performance rating is included in the assessment together with a detailed account of each project objective and its realization, as well as possible discrepancies discovered. The evaluation was commissioned by MINWA project staff and was performed by an internal evaluator.

Overall it was found that MINWA had achieved its stated goals satisfactorily in both project countries. Only in relation to impact and sustainability of the results could no conclusive assessment be administrated at this stage, as only four months had passed since the project ending. Programme level targets and policy objectives were also met in a satisfactory manner. The project was relevant in its own field and despite encountering some serious obstacles particularly in Finland managed to perform most of its stated activities as planned.

KEYWORDS:

evaluation, wastewater management, European Union

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1 INTRODUCTION

Almost all types of public policies, activities and programs are nowadays subject to evaluative measures. Public expenditure gains legitimacy and public acceptance through procedures of assessment – in short, showing the taxpayer what has been made of his/her money. Traditionally, public activities have gained apparent legitimation from the politicized activity of propagating principles and high ambitions in proclamations of noble intent. However, nowadays mere high talk is not deemed sufficient. Public policy and spending should be steered by results, not good intentions, and these results should be systematically measured. Evaluation, therefore, is based on a simple notion of gaining public accountability of programs through evaluating the results of a given program (Vedung 2003; 2005).

This thesis sets out to examine the evaluation of European Union funded projects through the case study of evaluating MINWA project (Minimization of Wastewater Loads at Sparsely Populated Areas). MINWA is a three-year (2009 – 2012) Finnish-Estonian cooperation project, which receives 75 % of its funding from European Regional Development Fund (ERDF). This funding is channeled through Central Baltic INTERREG IVA Programme, a European territorial co-operation programme funding cross-border projects in the central Baltic Sea area consisting of parts of Estonia, Finland (incl. Åland), Latvia and Sweden. This thesis aims to evaluate the effectiveness of MINWA project from two interrelated points of view – from both the accomplishment of ERDF/INTERREG IVA program priorities and the attainment of project goals as stated in the project application. As such, the study contributes to the study of EU program funding evaluation as seen from a particular project point of view. On the other hand, the study addresses the subject area of wastewater management in sparsely populated areas, and examines how successful MINWA project has been in realizing its stated goals of improving the water quality by decreasing waste water loads from sparsely populated areas.

Over the last decades, the state of water quality in the Gulf of Finland and the Archipelago Sea as well as many river basins in Estonia and Southern Finland has greatly decreased due to eutrophication. Untreated wastewater loads are considered to contribute to eutrophication to a major extent, and insufficient wastewater treatment may also cause significant hygienic problems. These influences can be especially observed both in in-land waters and coastal areas. Even though from year 1994 to 2008 coastal point source discharges to the Baltic Sea decreased for both nitrogen and phosphorus in Finland, and experienced no great increase in Estonia, good environmental quality in the Baltic Sea has by no means been re-established (Helsinki Commission 2011, 10).

The aforementioned problems are highlighted in Estonia and Finland where the share of people living in sparsely populated areas is considerable. In Finland, 20 % (1 million inhabitants) of the population live in sparsely populated areas, whereas in Estonia the number is even greater at around 30 %. Leisure homes, which are used mostly during the summertime are very common in these areas and increase nutrient loading to warm waters already prone to eutrophication. (Finnish Environment Institute 2011; Hajajätevesityöryhmä 2010.)

While the effectiveness of wastewater treatment in centralized municipal treatment plants has significantly improved during the last two decades, wastewater treatment in sparsely populated areas still often relies on septic tanks and obsolete leaching fields. Only in recent years have decision-makers in Finland begun to grasp the severity of this situation and the necessity of improving wastewater treatment in sparsely populated areas. In Estonia, the situation has also been neglected for decades, with some 400 000 people still living outside sewerage infrastructure.

To reach a sufficient level of purification in terms of water protection targets, as well as for the treatment to be effective, it is crucial that wastewater treatment systems be correctly planned, installed and maintained. Neglect of service and maintenance of the wastewater treatment systems is often the cause of bad treatment results. MINWA aims to improve training and education and increase the exchange of knowledge, experiences and best practices in treating

wastewaters in sparsely populated areas. Research regarding the effectiveness of different treatment systems was implemented for the whole duration of the three-year project. Models for treatment systems, maintenance and service, as well as follow-up systems were developed in co-operation between Estonia and Finland. Research results gathered during this project are to be used for educational development and for the improvement of treatment systems, and they are disseminated through educational and official networks.

In a nutshell, the main objective of MINWA project is to improve water quality by decreasing wastewater loads from sparsely populated areas through education, counseling and research. The nutrient loading is reduced at a local level, which leads to improved hygienic water quality and improved recreational use. As such, the thesis in question is linked to the wider frameworks of both the evaluation of publicly funded, accountable programs and projects, as well as the development of water conservation in sparely populated areas.

The research specifically aims to answer the following questions:

How successfully have the objectives mentioned in MINWA project application been realized?

How well do the results of MINWA project realize programme-level wider policy objectives?

As Rutman (1997, 17) has concluded, inherent in measuring a project against its stated goals is the notion that there is a goal which has a certain value attached to it. Identifying and determining the degree of success in attaining these goals is what this thesis is all about. However, attention has not been limited to the goal realization alone, or to the outcomes which neatly fall under the stated goals. Discrepancies in goal fulfillment will be accounted for, as well as possible bias or other problems stemming from the research setting.

2 THEORETICAL BACKGROUND AND METHODOLOGY

In this chapter the rather diverse and multi-faceted theoretical background and methodology of evaluation are presented. This account is by no means all-encompassing, as both evaluation research and practice cover a wide array of different types of theoretical orientation and methods. A sample coverage is however given.

2.1 What is Evaluation?

There are probably as many definitions of evaluation as there are evaluators. Among professional evaluators there is no established, uniform definition of what the term evaluation precisely indicates (Worthen et al 1997, 5). In simple and general terms an evaluation relates to *the stated value of a certain target of evaluation* – a project, programme, invention or a service, for instance. As Worthen et al. phrase it, “evaluation is determining the worth or merit of an evaluation object”, or, more broadly, “the identification, clarification, and application of defensible criteria to determine an evaluation object’s value (worth or merit), quality, utility, effectiveness or significance in relation to these criteria” (ibid.). In this thesis this definition certainly applies, since the merits of a given project are assessed according to established criteria.

A relatively novel field, evaluation terminology is still somewhat varied. Some terms and concepts might be used interchangeably while others overlap. (Hughes & Nieuwenhuis 2005, 12). For the sake of consistency and simplicity, agreeing upon what certain terms do and do not cover is in order. Evaluation can thus also be defined by *ruling out what it is not*.

The evaluation in question does not apply the term evaluation to mere *monitoring*. As Hughes and Nieuwenhuis describe, monitoring is about checking. Do inputs match outputs, planned activities actual activities, and if not, what sort of gaps there are. Instead, evaluation is “about explaining why the gaps exist”

(Hughes & Nieuwenhuis 2005, 12.) It is important to note that these gaps may refer to over-performance as well shortfalls. All deviations from the original plan have to be recorded, as they could influence future planning.

Capitalisation means building on the achievements of a project or a programme for the purpose of applying lessons learned in future activities. A project evaluation provides a good starting point for a capitalization process. *Valorisation,* looking at the lessons learned from a project and how these lessons could be translated in to a wider context is closely related to impact analysis. Valorisation thus refers to the longer-term sustainability of a policy or strategy, capturing the "collective learning" of a group of similar projects or a programme (Hughes & Nieuwenhuis 2005, 12-13.)

In this thesis the terms "evaluation" and "assessment" are applied rather interchangeably. In technical usage, however, assessment is often used to refer to the process of measuring the performance of e.g. individual students or staff. So, in some contexts, assessment might establish what took place whereas evaluation will be asking questions about why something took place. (Hughes & Nieuwenhuis 2005, 12.)

2.2 Evaluation Research and Theory

Evaluation and research represent separate, yet intertwined and overlapping domains. Traditionally, research has been considered to cover aspects such as the description, explaining and understanding of events, whereas evaluation is considered to entail an idea of defining the value of something. Nowadays it is recognized that scientists are not free of value judgments, nor of the potential political dimensions of their research subject. Be that as it may, high-quality evaluation, like "traditional" research, requires scientifically reasoned research settings and meticulous collection, analysis and interpretation of observational data. (Robson 2001, 25.) Unlike some research, however, evaluation deals with complex phenomena in the real world, often unstable and unpredictable settings and multiple stakeholders with differing agendas. What distinguishes evaluation

from many types of ”traditional” (positivist) research, then, is the high level of human activity involved. (Hughes & Niewenhuis 2005, 85.)

As a formal activity, evaluation has existed for a long time. Only since the 1960’s, however, has evaluation become a recognized area of academic study. It is probably safe to assume that evaluation began as a field of practice from which theory was later on derived. The evolution of evaluation theory brought with it the ideological disputes, terminology, ethics and definitions, very much in the same way as to any theoretical construction. By 2004, nearly 60 different models of evaluation had been identified. (Hughes and Niewenhuis 2005, 84.)

A good theory “will set out the assumptions it is making and on which its logic is predicated” (ibid.). Different practices are derived from different theories, and different theories make different assumptions and generate varying models. This creates both theoretical and practical versatility very much needed in the diverse field of evaluation.

Certain *philosophical or ideological* differences create diversity between different approaches to evaluation. These differences can generally be located on a continuum from objectivist to subjectivist. Objectivism reflects the scientific tradition of positivism, focusing on reproducible verifiable techniques of data collection and analysis. The evaluator is thus seen to be in a “technical” role, merely applying procedures which are scientifically justified. Subjectivism, on the other hand, relies on experience more than the scientific method, and the validity of subjectivist evaluation depends largely on the experience, insightfulness and expertise of the evaluator. Naturally it follows that such evaluation is not reproducible. Even the objectivist stance, however, can conceal hidden values and bias not recognized by the evaluator himself/herself, and thus has to be considered somewhat experience-inflicted as well. (Hughes & Niewenhuis 2005, 84-85.) In any case, the conclusions drawn by the evaluator are always affected by personal reasoning to a large extent.

Different theoretical approaches to evaluation can also be distinguished depending on how they define value and make judgements –their “utilitarianism

versus intuitionist-pluralism". Utilitarian approaches to evaluation, according to Hughes & Niewenhuis (2005, 86) are based on the premise that the best programmes are those that achieve the *greatest good for the greatest number of stakeholders.* The evaluators' task therefore is to assess the overall impact of the project or programme in terms of total group gains, applying criteria selected for determining worth. Where the utilitarian view relies on reaching masses, the intuitionist-pluralist approach is based on the premise that value depends on the *impact of a programme on each individual*. The aspect which maximises the benefits for all stakeholders is of greatest value here, hence a lack of a common index of good and instead a multitude of criteria and judges. All stakeholders are seen as legitimate judges of the merits or worth of the project or programme.

Models as the ones mentioned above provide frameworks for evaluation, rather than clear-cut "recipes" (Patton 2002, 169). They help evaluators identify and distinguish alternative approaches of evaluation. The research at issue here approaches the evaluation problem from the point of view of a classical model of evaluation, goal-attainment evaluation as presented by Evert Vedung (2005). Goal-attainment can be further divided into two main issues: the goal achievement measurement and impact assessment. The key question in goal-achievement measurement can be stated as follows. "Are the results in accord with program goals?". The impact assessment issue can be phrased "Are the results provided by the program?". (Patton 2002, 169-170; Vedung 2005, 37-38.) Within the scope of the research in question, focusing the analysis on goal achievement measurement is well founded – however impact assessment will be applied to some extent as well. Impact assessment will in particular relate to the larger framework of wastewater treatment in the Baltic Sea region, and the effectiveness of EU-funded projects such as MINWA in improving the state of the Baltic Sea.

As a model of program evaluation, goal-attainment evaluation is simple and explicit. Basically the evaluative procedure begins with identifying the goals of the program – their real meaning and rank - and turning them into measurable ob-

jectives. It is in relation to this operationalization of objectives that problems of validity may occur. This matter will be dealt with later in the thesis. The second step comprises of determining the extent of practical realization of the identified goals. In the third and final step impact assessment takes place. As such, the goal-attainment model measures effectiveness by asking questions about the integral content, outputs and outcomes of the program, instead of program procedures like due process. In doing so, the model differs from models like economic or institutional models of evaluation, which would focus more on the program costs or the organization of evaluation. (Vedung 2005, 38 – 39.)

The model has been hailed for its simplicity and the apparent democratic aspect (Vedung 2005, 40 – 41). On the downside, the goal-attainment model disregards one rather essential aspect of project realization: the costs. Means of goal-attainment, the actual costs of goal accomplishment that may have incurred (money, time, human efforts) are completely ignored. (Vedung 2005, 43.) It is for this reason that I will include some analysis of both material and human resource input in the logical framework that will be used as a tool of evaluation. The logical framework is described in more detail in chapter three.

2.2.1 On Methodology and Models

Conducting an evaluation can be a strenuous task. Evaluation models help alleviate this task. However, due to the diversity of methodology found in the field, defining evaluation as a research trend is not a straightforward issue. In essence, evaluation research aims to assess impacts and results of different procedures to help facilitate future decisions or to develop more effective methods (Tanskanen & Tanskanen, 2002). Evaluation proportions the goals of the project to the goals of the provider of funds. In some projects these targets are rather general, whereas in others the targets are specified and thus easily measurable. Such targets whose fulfillment cannot be measured should not be set in the first place. (Keränen 2003.)

What, exactly, does a project evaluation appraise? There are many different aspects that can be chosen as *targets for evaluation*. One such aspect can be evaluating the productivity or effectiveness of measures or the congruence of measures and goals. Processes can be evaluated, as well as the use of funds (cost-efficiency) or the results. On the other hand, the whole of the project logic can also be the target of appraisal. Whichever the target of evaluation may be, certain issues should be defined upfront, pre-appraisal: *what is being evaluated, why the evaluation is being made, what is the scope of the evaluation and who is doing the evaluating*. (Keränen 2003.)

As has been established by now, evaluation of a given project can be approached from several different points of view. The essential thing is to make a conscious selection of this point of view and then retain it throughout the analysis. There are several ways to classify these “points of view”, or evaluation strategies. Hyttinen (2006, 20-21) divides these strategies into three alternative orientations: evaluation for accountability, evaluation for knowledge and evaluation for development. Accountability evaluation approaches the evaluative task from the financer’s point of view, evaluating accomplishments with the finances given, whereas information gathering evaluation comprises, for example, scientifically oriented background studies on the necessity of a given project. Development evaluation, on the other hand, is aimed at evaluating the developing of something new, often realized through a project. Regardless of the strategy chosen, the design of evaluations should always take both practical and scientific considerations into account – following the rules of scientific study to reach reliable findings, but not limiting evaluation to the researchers’ domain (Robson 2001, 25). Programmes and projects most often stem from practical needs, not mere theoretical realms. MINWA project evaluation deals mostly with accountability, however both aspects of information gathering and development are present.

As already stated, methods of evaluation represent a wide array of different approaches, methods or instruments that can be utilized in addressing the evaluation question. (Sillanpää & Ålander 2003). Evaluations can be conducted either

internally by a project team member or partner, or *externally,* by an outside party. Internal evaluation has the advantage of being “inside” the project and thus providing an expert view of project activities and their effects. On the downside, internal evaluation can be colored by bias stemming from personal involvement. (WWF 2005.) However, commissioning an external evaluation does not in itself guarantee objectivity in evaluation. External evaluators are “in it for the business”, and therefore might not want to risk getting a dubious reputation from too critical an evaluation – albeit a truthful one. (Vedung 2005, 118.)

Evaluations can be summative or formative. Summative evaluations serve the purpose of judging the worth of a program at the end of the program activities, thus assessing program outputs or impacts, whereas formative evaluations aim to assess the worth of a program while the program activities are still happening (Worthen et al. 1997, 14; Patton 2002, 218-220). Whether formative or summative, in order to attain an objective evaluation process certain aspects have to be borne in mind. The analysis must be balanced, bias recognized and the differing stakeholder points of view reconciled. (WWF 2005.) In this thesis, a summative evaluation is conducted to determine the merits of MINWA project in relation to stated criteria.

Methodological choices often correlate with the evaluator’s ideological approach. These are not, however, necessarily rooted in the above mentioned philosophical approaches. A fundamental divide between qualitative and quantitative approaches may exist according to many evaluators. According to Hughes and Nieuwenhuis (2005, 86) this is however not a difference between paradigms but simply a way of deciphering different evaluation approaches by types of data. The basis for any evaluative research in any case is that the evaluator makes the choice of data and methodology based on the requirements of the commission given (Virtanen 2007, 156).

Fitzpatrick et al (1997) have identified six major clusters of evaluation approaches. The *objectivist-oriented* approaches focus on specifying goals and objectives and determining whether and to which extent they have been accomplished. *Management-oriented* approaches, on the other hand, are con-

cerned with identifying and meeting the informational needs of managerial decision-makers. *Consumer-oriented* approaches center in developing evaluative information on products for the consumer's use. *Expertise-oriented* approaches depend primarily on the direct application of professional expertise to judge the quality of a given endeavor. *Adversary-oriented* approaches take a different approach in focusing on views (pros and cons) of different evaluators. *Participant-oriented* approaches have the involvement of participants (or stakeholders in what is being evaluated) as the essential point when determining the values, criteria, data and needs of the evaluation. (Fitzpatrick et al 1997, 78-79.)

The evaluation in question in this thesis is essentially objectivist-oriented. The distinguishing feature of this evaluation approach is that first, the purposes of an activity are specified. The evaluation then focuses on determining the extent to which these purposes have been achieved. The objectivist-oriented approach has more or less dominated evaluation thinking since 1930's and with its straight-forwardness it has proved widely attractive. (Fitzpatrick et al. 1997, 89.) It is in this simplicity that the greatest appeal of this approach lies – it is easy to understand, follow and implement, and produces information often most desired by funding bodies. Useful as it seems, this approach has nevertheless faced some criticism. It has been asserted that it lacks a real evaluative component in that it focuses on results instead of facilitating assessment of objectives; that it lacks standards against which to judge importance of discrepancies between objectives and actual performance; that it neglects the context of the evaluation; that it promotes a linear, inflexible approach to evaluation – to name but a few. (Fitzpatrick et al 1997, 91-92.) This criticism is of course welcomed, and it could be added that this approach does not make any judgment on the stated objectives in the first place – whether the objectives are reasonable, realizable or achievable in any way. These limitations should be taken into account when conducting the evaluation, and their possible influence on the evaluation outcome considered when drawing conclusions of the whole evaluation.

2.2.2 Why Evaluate?

Evaluations, like any research, have to be justified. The mere notion of a required evaluation in the project plan does not necessarily provide adequate grounds for conducting an evaluation. A genuine need for an evaluation of any given activity is necessary. But what purposes can evaluation have?

MINWA project, for example, receives 75 % of its funding from the European Union (85 % in Estonia). Evaluating publicly funded projects and programs is of essential importance for the legitimacy of public funding. Evaluating the accountability of a project is a “measuring stick” that can be used to justify the existence, proceedings and continuation of a project (Hughes & Nieuwenhuis 2005, 13). This viewpoint is mainly inspectorial and judgmental, a “value for money” approach giving high emphasis to quality standards.

On the other hand, evaluation can be about project improvement. A project is thus seen as a developmental process and the evaluation a tool to help clarify possible problems in project realization and also to recognize good practices. Evaluation is thus viewed from a “collective learning” point of view, giving interpretation and understanding the main emphasis. (Hughes & Nieuwenhuis 2005,13-14.)

Yet another impetus for evaluation stems from the subject area in question. Wastewater treatment at sparsely populated areas has been widely subject to scrutiny over the recent years. The relevance of legislative measures regarding wastewater treatment has been questioned, in particular the strictness of nutrient emission limits for wastewater effluent. An important part of MINWA project is studying the effectiveness of small-scale wastewater treatment plants, which will hopefully contribute to alleviating some of the controversy surrounding the subject. Overall, midst all controversy and differing opinions, finding out whether a partially EU-funded project can answer at least some of the practical development needs in the field of wastewater treatment management is of great relevance both to the development of these financial instruments, and the practical planning of future projects.

Evaluation is also an important part of Project Cycle Management, or PCM – the primary set of tools for project design and management in the European Commission. PCM is a term used to describe the management activities and decision-making procedures used during the life-cycle of a project, such as key tasks, roles and responsibilities, key documents and decision options. PCM helps to ensure that, among other things, projects are supportive of overarching policy objectives of the EC and its financing instruments; that projects are relevant and address real problems; that the projects are feasible – that the objectives set can be reached within the constraints created by the operating environment and capacities; and that benefits generated by projects are likely to be sustainable. (European Commission 1999 9-13; European Commission 2004, 17.) All of the above should be included in an evaluation of an European Commission funded project or programme.

None of the purposes and methods of evaluation mentioned above are automatically more or less valid than another. Nor are they the only ones. Which viewpoint is chosen is defined by the different preferences or needs of project staff, stakeholders or the funding bodies. The “measuring stick” evaluation is surely needed when there is public funding involved – like in the MINWA case. The accountability model has however been seen as lacking in many respects lately, making the point that justifying expenditures doesn’t necessarily give good advice on how to plan projects with sustained long-term effects.

2.2.3 What to Evaluate and How?

In practical terms, it is not conceivable to evaluate every possible aspect of a project or a programme, even in the unlikely situation of having unlimited time or money (Hughes & Niewenhuis 2005, 37). Prioritization and conscious selection are of essence. In practice this often means mapping out the actual needs of the orderer, or commissioner of the evaluation. Be it the processes or the products of a project or some other aspect, the implications of this selection are

quite clearly the basis of the whole evaluation task. The objective and the potential implications of the evaluation are defined at this stage.

After setting out the ground rules for the evaluation – who will be involved, what aspects of the project need assessing, what questions need to be answered, what sort of evidence might give satisfactory answers – a plan is needed for collecting and analyzing data. There are many different theoretical perspectives on evaluation and even more methods available for conducting the data collection. Evaluation research applies the same methodology – techniques and procedures for collecting the data needed – as basic research methodology.

In practice, a multitude of different issues define the selection of methods for information collection. In essence, however, three aspects should be considered. First of all, defining what kind of information is needed is essential. Second, the sources of information, where the information can be found, need addressing. Thirdly, it needs to be decided upon how the needed information can be best be collected within the human resources, budget and schedule constraints in each particular case. (Hughes & Niewenhuis 2005, 47.)

In terms of time, effort and overall resources, data collection is probably most consuming in many if not most evaluation processes. Hence it requires proper planning. Common methods of data collection include observation, interviewing, questionnaires and written documents. The purpose and nature of the evaluation, and the evaluation questions in particular, mainly dictate the choice research methods. Different methods have different strengths and weaknesses. In order to guarantee the quality of the data (and hence the validity and reliability of the whole evaluative process), at least two different methods for data collection should be applied. (Robson 2001, 124 – 125.)

2.2.4 Evaluator's Role

The role of an evaluator is not of a mere technician, but more of a social scientist (Rutman 1977, 13). An evaluator is supposed to examine a project's or a programme's operation critically and rigorously with both intended and possible

unintended outcomes in mind. Of course the evaluator follows the evaluation needs of the commissioning party – the realization of goals or the cost-efficiency, for example. However, not only practical matters of significance should be considered in the evaluation, but also theoretical issues and more far-reaching societal concerns. If the evaluator succeeds in posing critical questions instead of simply providing a technical assessment, the evaluation can be seen as to provide a basis for accountability on a wider scale (Rutman 1977, 13).

Evaluations can basically be conducted by anyone. There is, however, one defining aspect which sets a clear distinction for the evaluating party: whether the evaluation is done by an external or an internal party.

An evaluation is considered *external* if it is produced by a body external to the implementing body behind the object of the evaluation – a programme or a project, for instance. Internal evaluation, instead, is considered to be produced by the same party which is in charge of activities and outputs that are under evaluation. (Worthen et al. 1997, 18; Vedung 2005, 115.)

Both internal and external evaluations have their pros and cons. Ideally, organizations should of course be self-evaluating. However, not all evaluation questions might be solved with an internal evaluation due to the inherent bias involved and sometimes a lack of experience. External evaluators are of course considered more unbiased, but may disadvantage form a lack of in-depth knowledge on the subject-matter.

The choice of the evaluating party should be made keeping in mind the purpose of the evaluation: whether it is being made for accountability, improvement or basic knowledge. When the purpose is the accountability of a project to outside parties, an evaluation should be external, to avoid possible bias. Also evaluations with an outlook for basic knowledge are best conducted externally, as they tend to benefit the research community in a given field and should thus be professional. Nevertheless, depending on the implementing agent, basic knowledge evaluations can also be conducted internally. As for improvement

evaluations, they are best conducted internally. This way they benefit those who need the information and facilitate rapid learning. (Vedung 2005, 116 - 120.) But, as always in the everyday life, many other aspects affect the choice of the evaluator as well – financial ones certainly not being ones to disregard.

In this thesis the evaluation is conducted internally – the evaluator, i.e. myself, worked for MINWA project as a student assistant for two over two years. As the evaluation is in part performed for the sake of accountability, one could argue that using an internal evaluator would undermine the credibility of the evaluation results. It should be borne in mind, however, that the evaluation also has a developmental, or "improvement" aspects, as similar projects have so far been rather scarce in Finland and non-existent in Estonia. Also the evaluation endeavor was not demanded by the funding programme but agreed upon to be performed by the project staff – hence programme requirements on evaluation did not apply and the choice of evaluator was left for the project staff. In any case, the role of the evaluator and the possible impacts on reliability and validity it may incur will be considered in more detail in the concluding chapter of this thesis.

2.2.5 Evaluation Plan

An evaluation plan delineates the strategy for realizing a particular evaluation. It also defines what is expected from the evaluation and how the evaluation will be carried out. An evaluation plan can, for instance, be structured as follows (Hyttinen 2006, 28 – 29):

- Project structure
    - Project goals and methods of achieving them
    - Project target group, stakeholders and partners
    - Analysis of the needs the project tries to address
    - Resources available (funding, personnel etc.)
- Process evaluation
    - Defining evaluation tools and methods
    - Indicators for measuring success

    - Distribution of work within the project
    - Evaluation contents and schedule
- Evaluating results
    - Effects of the project
    - Goal realization
    - Factors of success and development needs
    - Generalization: is the project model applicable in other situations
    - Is the activity evaluated worth continuing

The plan above can be further formulated into a “Terms of Reference” for an evaluation, widely used in European Union evaluations. Terms of reference has been conducted for MINWA evaluation and is presented in more detail in chapter four and in annex two.

2.2.6 Threats and Challenges

Several threats may hinder the realization of an evaluation and threaten its validity. *Unrealistic expectations* may fall upon the evaluation, distorting its actual results (Hyttinen 2006, 31). The aim of the evaluation is not to solve disputes between stakeholders or figure out answers for some focal problem points of the project. This, however, may sometimes be assumed of the evaluation. Also assuming that the evaluation will give clear and refined information on project impacts can be unrealistic, as impacts are always multi-layered and overlapping and thus difficult to decipher. It is therefore important to figure out from the start what is actually being measured, and how the information needed could be reliably attained (Hyttinen 2006, 31-32).

Oversizing the evaluation can also present problems. An evaluation should always be sized according to the needs of the project. Internal evaluations in particular are often prone to assuming overly-extensive evaluation tasks. (Hyttinen 2006, 32.) Therefore, for the purposes of this thesis, the evaluation has been limited to focus on goal-attainment, and not to include for example larger scale impact assessment, which would require much more time and resources. Of

course, some assessment on impacts will be touched upon during the analysis – however they will not be of main emphasis.

Related to the former source of threat is the specification of objectives, that is, *trying to find goals which are not too vague or broad to measure* (Rossi 1972, 17; Cain & Hollister 1972, 112). Establishing specific and concise goals will help provide information that best answers the evaluative task (Robson 2001, 29). In the MINWA case the main objective is to improve water quality in the Baltic Sea. This goal is of course very broad, and assessing whether the goal has been met is quite hard indeed. This problem will be dealt with later in this thesis.

The *operationalization* of measurable targets of evaluation may pose threats to the validity of the research in question. There are at least two considerations in relation to reliability and validity that should be taken into account regarding the evaluation:

- Programme-level validity: Is MINWA relevant as a project in regard to the improvement to water conservation?
- The validity of indicators of goal attainment: are the indicators or measures used to evaluate success of goal attainment valid? Are the measures operationalized correctly?

For any given measure to be applicable, it has to be both reliable and valid. It is essential that the study actually succeeds at measuring what has been set out to measure – assessing what is being attempted to measure. The operationalization of goals in each work package hence presents a major challenge for the study. Assessing programme level, overall relevance of MINWA in its sphere of operation is also very challenging. This aspect is best considered and deduced after the whole evaluative process, once the first goal is achieved through valid operationalization and analysis.

3 EVALUATING EU FUNDED PROJECTS

EU evaluation, as opposed to other evaluations of public policies and programs, has certain distinguishing qualities. The European Commission, through EVALSED, the online and interactive resource for the evaluation of socio-economic development, defined evaluation as (ERDF 2007, 7):

> "Judgement on the value of a (usually) public intervention with reference to criteria and explicit standards (e.g. its relevance, efficiency, sustainability, equity etc.). The judgement usually concerns the needs which have to be met by the intervention, and the effects produced by it. The evaluation is based on information which is specially collected and interpreted to support the judgement."

Evaluation in the European Union can thus be deemed an enterprise to assess the relevance, performance and success of ongoing and completed projects and programmes. Criteria for this assessment will be presented later in this chapter, as will the commonly used methods – Terms of Reference and the Logical Framework matrix.

3.1 Evaluation in the European Commission

Evaluation is an important part of the European programme cycle. All programmes share a similar cycle of programme development, identification of projects, appraisal of projects, financing of the projects, implementation of the programme through the projects and evaluation of the programme (Interact 2012, 11.)

Evaluation of programmes offers a chance for stakeholders to improve their programme and to present the programme results to a broader audience. Evaluation of programmes thus provides both reflection on programme performance and feedback on the relevance, effectiveness, efficiency and/or consistency of the programme – the key evaluation criteria in EC evaluation (Interact 2012, 11.) The European Council Regulation 1083/2006 requires ongoing evaluation

to be carried out, but the scope, time frame and extent of the evaluation are to be decided by the programmes themselves (Interact 2012, 14).

There are no requirements to link project and programme evaluation, nor are there strict guidelines for project evaluation provided by the Commission. Project evaluations are not a requirement of the European regulations. Earlier, most evaluations by the EC Evaluation Unit and its predecessors were mostly performed at the level of individual projects. However, this is no longer the matter as the Unit now focuses on higher levels of policy formation, programming, country and regional strategies, sectoral development, aid instruments and budget lines. (European Commission 2001.) It is thus up to each financial programmes' managementto decide whether evaluation is required from the beneficiaries (Interact 2012, 84). Giving guidelines for project evaluations therefore also falls under the responsibility of the individual operational programme managers.

Hughes and Niewenhuis (2005) present some key features to European sponsored projects and assess their impact on the evaluation process. Firstly, most, if not all, programmes demand an evaluation plan to be built into the application forms, reinforced with performance indicators and a compulsory budget line for evaluation. This may sound good in theory. In practice, however, projects are rarely managed or evaluated by the people who have been involved in the application process. Thus the evaluator may be fresh to the project once starting the evaluation and has to deal with set demands for evaluation given at the application stage – with no control over the process they are about to carry out. In addition, application forms often apply models of evaluation which are not integrated with the rest of the project activities, possibly making the relationship between the activities and their evaluation incoherent. With MINWA project, no evaluation was demanded on behalf of the funding programme.

Secondly, European projects are always time bound and output-based and both have to be stipulated from the outset. A plan with clearly defined objectives and outcomes is the basis for all projects, and achieving these forms the basis of evaluation. If the evaluation is built from the start of the project, it will be easier

to identify circumstances in which the original objectives are no longer relevant. According to Hughes and NIewenhuis (2005, 25), an evaluation process critically reflective of the project is likely to induce changes in the project plans, accommodating the changed external circumstances. In contrast to general belief, funding agencies even invite these changes – they want projects to succeed. Projects should be dynamic, flexible and responsive of the needs of the stakeholders. An expertly conducted mid-term evaluation report sets out a useful platform for making the needed changes during the course of the project.

EU funded programmes operate in a political context which has implications for projects and, therefore, for their evaluation. The ever-changing EU policy environment affects the programmes, and the projects exist within the confines of the programmes. Each programme has a set of general policy objectives which derive from the EU political context, and translate into practice through the projects funded. The constantly altering policy trends have implications for the evaluation in terms of project effectiveness in meeting the stated objectives – the project objectives should reflect the programme objectives, which in turn are influenced by the changing EU policies. (Hughes and Niewenhuis 2005, 25-26.)

EU projects must in some way demonstrate the added value *of the project at a regional level* (e.g. for the structural funds) or *a European level* (e.g. for the Education, Training and Youth Funds) or at *occupational or sectoral levels* – whereas many non-EU funded only need the evaluation to demonstrate the effectiveness of the project within its own organization or the immediate environment. EU project evaluation not only has to be conducted locally but also continuously assess the potential implications of the project on the appropriate higher levels. (ibid.)

In many EU projects there is a compulsory element of transnationality. This naturally affects the evaluation questions. How central is transnationality to the project? What is the model and processes of transnational working? These are among the issues evaluators need to consider. (ibid.) In MINWA project, for example, transnationality plays an important role. The cooperation between Finn-

ish and Estonian partners is seen to have an integral significance in fulfilling the stated objectives. Whether this is the case or not will be explored in chapter six.

Multi-annual funding programmes often demand outcomes at each stage to justify payments. A unit-costing model, however, does not necessarily reflect actual project life cycles. The funding model may, for example, expect outputs already in the first phases of the project, even though for many a project composing activities takes time, inevitably postponing first outputs until a solid foundation for action has been built. The tension between the funding programme's demands and the project's output generation needs to be borne in mind during the evaluation process. (ibid.)

The EC project application forms are not prescriptive about evaluation. Most often evaluation needs to be done, but how, when and by whom it should be done is left for the project management to decide. This, obviously, provides a welcome element of flexibility to the project. From a programme point of view, however, this makes rounding up different project's evaluation outcomes very challenging. (Hughes and Niewenhuis 2005, 27.) The Central Baltic Interreg IVA programme states that the Steering Committee of a project can require an external evaluation to be carried out if the respective project is of a high strategic relevance for the programme implementation. Otherwise external or internal evaluations are not directly called for. (Central Baltic Interreg IVA 2009.)

The period between the making of the funding application and the start of the project is often prolonged. Therefore projects are often managed by people who weren't necessarily involved in the planning stage. Evaluators can be appointed only after funding has been approved, and thus often have to work without a proper sense of history of the project. A problem for evaluators is to decide whether they are evaluating the project as conceived at the time of application or as the project ought to be at the appointed stage of evaluation. Establishing possibly changed project environments should be considered crucial when planning the evaluation. (Hughes and Niewenhuis 2005, 27-28.)

3.2 Evaluation Criteria

The European Commission has identified specific issues which an evaluation must address in order to adequately assess the delivery of a programme or project and – so-called evaluation criteria. These key issues include (European Commission 2001; ERDF 2007):

Relevance

The relevance of a project relates first and foremost to its design. It concerns the extent to which the objectives stated in the project application actually correspond with identified problems or real needs. These real needs or problems may, naturally, change during the course of the project. Relevance thus needs to be kept under review throughout the duration of the project, in case the circumstances, whether physical, political, economic, social, environmental or institutional, change so far as to necessitate a change of focus. Relevance thus concerns the "appropriateness of the project design" in relation to the problems both at the time when the project was designed, and at the time of evaluation.

An analysis of relevance in an evaluation of a given project should focus on the following (adapted from European Commission 2001, 11):

- identification of real problems and needs and of the correct beneficiaries
- how well the project's initial design addresses the above
- the quality of the entries in the assumptions, risks and conditions column of the LogFrame at the appropriate levels
- overall design strengths and weaknessess:
    - quality of the LogFrame
    - clarity and internal consistency of the stated overall objectives, purpose and results
    - whether the objectively-verifiable indicators of achievement were appropriate
    - How realistic were the choices and the quantity of inputs

Efficiency

The criterion of efficiency focuses on how well the various activities have transformed the available resources into the intended results (or outputs). Efficiency

can be measures in terms of quantity, quality and timeliness. Efficiency also addresses “value-for-money”, or cost-effectiveness – whether similar results could have been achieved at a lower cost in equal time.

An analysis of efficiency in an evaluation of a given project should focus on the following (adapted from European Commission 2001, 13):

- The quality of day-to-day project management, e.g.:
    - management of the budget
    - management of personnel, information, property, etc.
    - Adequate management of risk, i.e. whether flexibility was demonstrated if faced with changes in circumstances
    - relations/co-ordination with partners, beneficiaries, financier
    - respect for deadlines
- costs and value-for-money : whether benefits from the project justified the costs incurred when compared with similar projects or established alternative approaches and while also taking contextual differences into account
- Quality of monitoring: its existence or nonexistence, accuracy and flexibility, and how monitoring was utilized
- whether the chosen indicators of efficiency were suitable and, if not, whether management amended them
- whether any unplanned results arose from the activities

Effectiveness

In LogFrame terminology, the effectiveness criterion concerns how far the project’s results were used or their potential benefits realized – that is to say whether they achieved the project purpose. The essential thing here is estimating what difference the project made in practice – what was the real benefit from the products or services created.

An analysis of effectiveness in an evaluation of a given project should focus on the following (adapted from European Commission 2001, 12-13):

- whether the planned benefits have been delivered and received by the key beneficiaries
- the appropriateness of the indicators of benefit used to measure achievement of the project purpose. An assessment on the promptness and effectiveness of the project management to react to alterations in project design by making appropriate changes to the indicators should also be included.

- if the assumptions and risk assessments at results level were to turn out inadequate, or unpredicted external factors occurred, how flexibly the management was able to adapt to ensure that the results would still achieve their purpose
- how unforeseen results may have had an effect on the benefits
- whether any shortcomings at this level were due to a failure to take account of cross-cutting issues such as gender, environment and poverty during implementation

Impact

The term impact (or outcome) refers to the relationship between the project's purpose and overall objectives, in other words" the extent to which the benefits received by the target beneficiaries had a wider overall effect on larger numbers of people in the sector, region or the country as a whole". The analysis should be both quantitative and qualitative whenever feasible and needs to acknowledge the fact that the project will most likely be only one of the multitude of influences that contribute to the wider outcome.

An analysis of impact in an evaluation of a given project should focus on the following (adapted from European Commission 2001, 13-14):

- to what extent the planned overall objectives have been achieved and how far that achievement was directly related to the project
- how unplanned impacts may have influenced the overall impact
- whether the project's LogFrame indicators at this level were appropriate and if they were corrected when need arised
- all possible gender-related, environmental and poverty-related impacts and potential lack of overall impact resulting from neglect of these issues
- whether the desired overall impact could have been better achieved in some other way

Sustainability

The sustainability criterion relates to the continuance of positive outcomes of the project at purpose level after the end of external funding. Whether the longer-term impacts of the wider development process surrounding the project can be sustained at the sector, region or country levels is at issue here.

An analysis of the sustainability in an evaluation of a given project should focus on the following (adapted from European Commission 2001, 14-15):

- ownership of objectives and achievements
- whether the relevant national, sectoral and budgetary policies and priorities had a positive or negative effect on the project
- how adequate the project budget was for the purpose and financial sustainability
- socio-cultural factors – was the project in tune with local perceptions of needs

These criteria will be carefully considered when drawing conclusions on the MINWA evaluation. An overall performance rating for each of the criteria will be included in the assessment. The performance rating is based on the following scale (European Commission 2001, 15):

> **1 Highly satisfactory** (fully according to plan or better)
>
> **2 Satisfactory** (on balance according to plan, positive aspects outweighing negative aspects)
>
> **3 Less than satisfactory** (not sufficiently according to plan, taking account of the evolving context; a few positive aspects, but outweighed by negative aspects)
>
> **4 Highly unsatisfactory** (seriously deficient, very few or no positive aspects)

3.3 Terms of Reference

The term “Terms of reference”, or ToR, refers to “the document that details an assignment for an individual evaluator or a team of evaluators” (IEG 2011, 2). A ToR thus presents the requirements set for a certain evaluation by an evaluation manager by explicitly stating out the *objectives* of the evaluation, *role* of the evaluator, the evaluation *client* (commissioner) and the *resources* available for the evaluation. A ToR defines parameters for the following aspects (as retold from IEG 2011, 2):

- Why and for whom the evaluation is being done
- What the evaluation intends to achieve
- How it will be achieved

- Who will be involved in the evaluation (evaluator, stakeholders)
- When the evaluation will be completed
- What resources there are to conduct the evaluation

A Terms of Reference should be short and to the point and clearly state the relevant information needed for carrying out the evaluation. The specific content and form might vary somewhat depending on e.g. organizational requirements, local practices or the type of assignment. The MINWA ToR is presented in Annex one. As no specific guidance notes on composing the ToR were provided by the funding programme or by the commissioning party (TUAS), the instructions cited above were followed.

3.4 Logical Framework Approach in Evaluation

Where a ToR will help defining the overall object and scope pre-evaluation, a Logical Framework (LogFrame) Approach will act as a tool of analysis in the actual evaluative process. A LogFrame is a systematic, intelligible description of a project, which helps to classify project targets and to identify the causal connections between measures, outputs and results. The LogFrame is especially suited for ex-ante evaluations – however, it can serve as a useful supplementary tool in ex-post evaluation as well. (Sillanpää & Ålander, 2003, 15-17.) A LogFrame can be formulated as follows (Sillanpää & Ålander 2003, 14):

Table 1. The LogFrame model

Project description	Indicators	Source of verification	Assumptions
Overall objective	Impact indicators	Sources of data and methods used for impact verification	
Specific impacts/ purpose	Goal indicators	Sources of data and methods used for goal verification	Assumptions between specific and general goals
Outputs/results	Output indicators	Sources of data and methods used for output verification	Assumptions between outputs and specific goals
Inputs/activities	Inputs – required human and physical resources	Costs	Assumptions between inputs and outputs

The LogFrame is quite simply “a structured tabular method of summarizing what a project is intended to achieve, why, how and when”. It provides a set of interlocking concepts which are used of systematic analysis of a project or programme idea (European Commission 2004, 57). It is as valuable to the project manager as well as to the evaluator. In European Union funded projects the LogFrame is recommended to be drawn following the Commission’s Manual on Project Cycle Management. (European Commission 2001, 9; European Commission 2004, 57.) In many evaluations no LogFrame has been drawn up originally. This is also the case with MINWA evaluation. Therefore one should be prepared afresh at the evaluation stage to define the project as it was originally designed at the set four levels: overall objectives; purpose; results and activities and accompanied with associated indicators, means and costs.

For the purposes of the evaluation at issue, project goals will be examined through a logical framework following the form of the one described above. As pondered upon earlier on in the chapter, each MINWA project goal requires to

be specifically operationalized according to the goal characteristics to be able to extract valid, measurable data. It is through this operationalization that the actual success, in this case goal-achievement evaluation, can be achieved. It should be borne in mind, however, that the general impact indicators that are part of a LogFrame model can in this case only be stated on a very general level, since the focus of the evaluation in question is on the specific realization of project goals.

The diagram below presents the main linkages between evaluation criteria and the key LogFrame elements (European Commission 2001, 10):

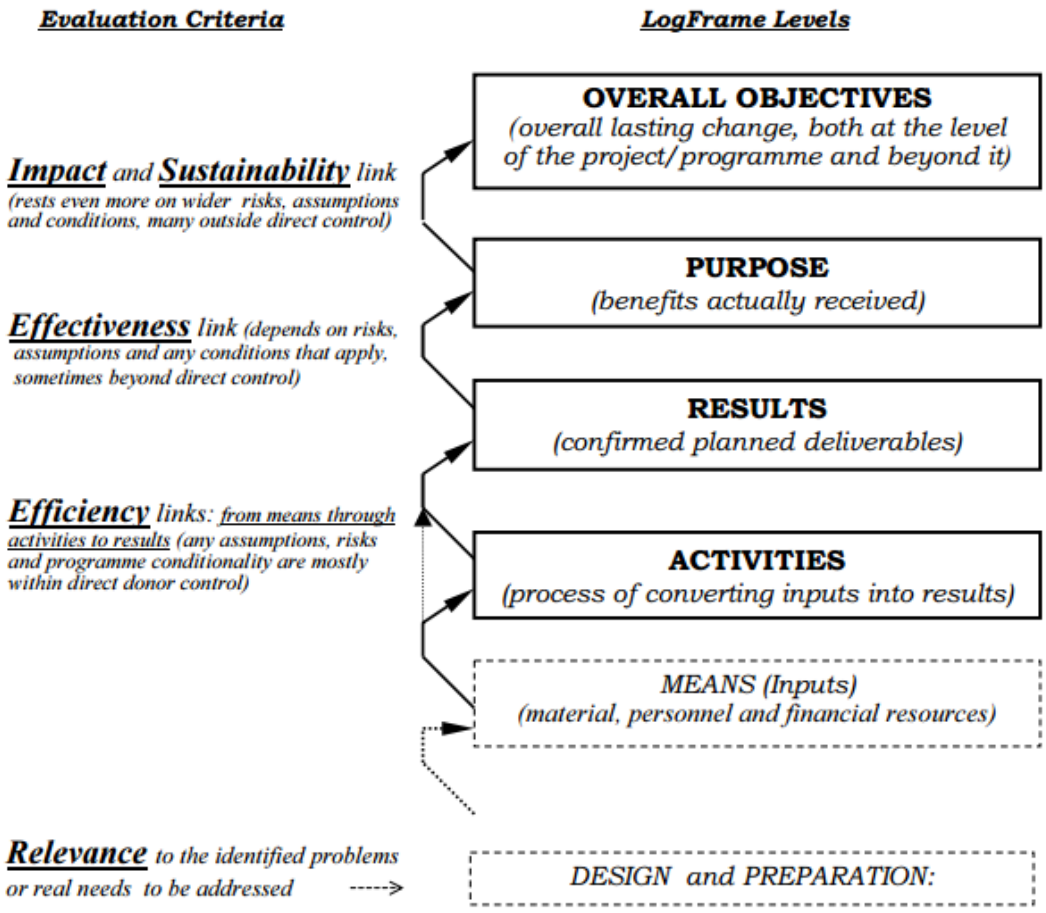

Figure 1. Connections between evaluation criteria and LogFrame levels.

The MINWA LogFrame – devised at the evaluation stage – is presented in annex two. The LogFrame provides no tricks or magic solutions when it comes to evaluation, but it is a useful and effective analytical and management tool (European Commission 2004, 58). The evaluation criteria cited above together with the Logframe elements will be examined more carefully in the conclusion part of this thesis.

3.5 Indicators – Measures of Performance

The use of performance indicators and performance criteria or standards is an integral part of an evaluation system. The use of indicators is generally perceived as good practice, and funding systems often require for indicators to be devised already at the application stage. In the case of accountability evaluation, indicators are almost certainly required. (Hughes & Niewenhuis 2005, 41.)

The use of indicators, however, also entails some risks. Their use may sometimes distort the evaluation process by mere “ticking of boxes” to express the fulfillment of pre-stated performance indicators – often quantitative – with the expense of real learning from things accomplished (ibid.). As will be seen when reporting the results of this evaluation, this holds true to MINWA at least to some extent. Another risk is collecting data that doesn’t really describe the right things.

To understand the possibilities, scope and the applicability of performance indicators one needs understand what an indicator actually is. Performance indicators can simply be described as measures that express how well a program is achieving its objectives. Performance indicators in projects are most often based on numerical evidence of achievement (Hughes & Niewenhuis 2005, 41). The so-called objectively verifiable indicators, OVIs, required in completing a LogFrame model describe the project’s objectives in operationally measurable, quantitative or qualitative terms. Specifying OVI´s already at the planning stage of the project helps to ensure the feasibility of objectives. OVIs thus help form the basis of the project’s monitoring and evaluation system. To be effective,

OVIs need to be measurable in a consistent way and at an agreeable cost. (European Commission 2004, 80.) In the MINWA case OVIs were not specified in the planning stage of the project, which made their devising challenging. Quantitative indicators did exist, and very general qualitative ones, however they did not cover all the aspects needed for the evaluation to be encompassing

In the LogFrame model, each indicator should be independent of each other and relate to only one objective in the intervention logic – to either the overall objective, the project purpose or to one result (European Commission 2004, 81). Using more than one indicator for establishing each of the above is, however, often required in order to achieve reliable evaluation data. Quantitative indicators may, for instance, be complemented with qualitative indicators. That being said, using too many indicators should be avoided for the sake for coherence.

Quantitative indicators refer to units of measurement, whereas qualitative indicators generally reflect subjective judgment of events, activities and the like (Hughes & Niewenhuis 2005, 42). Be it either or, the *objectivity* of any indicator is essential. An indicator is objective when the information collected should be the same if collected by somebody else – a measure of the reliability of the indicator (European Commission 2004, 81). It is obvious that assuring this is easier for quantitative measures as qualitative ones tend to be inflicted by a multitude of factors, ranging from circumstantial factors to subjective ones. This factor should nevertheless not be used to discredit or discourage the use of qualitative indicators – qualitative data can be every bit as informative, or even more so, as quantitative data. Some results may not even be measurable by quantitative terms at all. At any rate qualitative indicators should always be considered when choosing performance indicators, and used concurrently.

But is an evaluation valid without the use of indicators? Hughes and Niewenhuis (2005, 41) assert that undertaking a valid evaluation is conceivable without using established performance indicators as measures. Using pre-defined indicators, however, at the very least makes evaluating easier. Indicators can be said to be of crucial importance to an evaluator since they provide insights of actual

achievement of the project. They can provide direction and focus, highlight strengths and weaknesses, and enable comparisons within the project and between projects (that share the same objectives). (Hughes and Niewenhuis 2005, 42.)

On what basis, then, should different types of indicators be chosen? More than one indicator should be chosen in order to achieve even somewhat reliable information on project success. Establishing causal relationships is difficult in any case, and in project settings particularly, hence several different indicators are needed to be able to draw conclusions with any degree of certainty (Hughes & Niewenhuis 2005, 42).

Hughes and Niewenhuis (2005, 42-43) point out some essential aspects of choosing indicators. First of all, the indicators must always be based on the objectives of the project. In practice this means that indicators should be designed particularly for the project, not to adopt indicators designed for something else. Secondly, since indicators determine what information needs to be gathered they should be chosen on the basis of what data can be realistically and efficiently collected. Thirdly, it is important that the indicators are understood by stakeholders and that they are familiar to those intimately involved with the project. In other words, indicators should be carefully planned according to the objectives of the project, realizable, and intelligible.

The Central Baltic Interreg IVA programme obligates projects to determine indicators of success in the project application. Pre-set indicators are defined for programme level targets, as well as indicators for sub-programme and directions of support. The funding programme also determines certain policy objectives – equality, environment, competitiveness and economic development, information society – and matching indicators. Each project is to determine its contribution to each of the policy objectives at the application stage. These indicators are both (or either, depending on the objective) of quantitative or qualitative nature.

Without evidence an evaluator is unable to form conclusive decisions about the impacts of the project. Obtaining this evidence, with the help of indicators, is by far the most time and effort-consuming aspect of conducting an evaluation. Evidence, in short, is what provides proof of quality of the project. (Hughes and Niewenhuis 2005, 46.) It is this verification of evidence that is the challenge in evaluating MINWA project.

3.6 European Union Programmes and Funding

Nowadays, European Union presents perhaps the biggest singular source of funds for projects in member countries. Each year, the European Union funds thousands of projects through hundreds of funding programmes, allocating part of the EU budget to companies and organizations in member countries in the form of tender, grants or funds and other financing programmes. Funds are granted to projects and initiatives which promote EU policy priorities throughout the Union and further. (European Commission 2012.)

3.6.1 European Regional Development Fund

The European Regional Development Fund (ERDF) finances projects that foster *entrepreneurship, innovation, regional skills structures and research and development activities*. All these aim to promote regional development – to reduce the gap between the levels of development of the various regions. (ERDF 2005.)

ERDF provides supportive measures in the development of the productive environment, research and technological development, development of the information society, protection and improvement of the environment, equality between men and women in the field of employment, and cross-border transnational and inter-regional cooperation. (ERDF 2005.) In Finland, the EU provides funding for the development of Finnish regions with five regional programmes:

Southern Finland, Eastern Finland, Western Finland, Northern Finland and the Åland Islands.

3.6.2 Central Baltic INTERREG IVA -Programme

ERDF-funded Central Baltic INTERREG IV A Programme 2007-2013 aims at increased co-operation across the borders of the Central Baltic Sea region. The programme provides funding for cross-border co-operation projects in the programme area. As much as 96 million euros from the European Regional Development Fund has been and will be given out to projects in the participating regions of Estonia, Finland, Latvia and Sweden. The projects that receive funding must involve partners from at least two countries. The Programme consists of the overall Central Baltic Programme, the Southern Finland - Estonia and the Archipelago and Islands Sub-programmes. (Central Baltic Interreg IVA 2009.)

The programme has three priorities that all contribute to the vision and objectives of the programme: *a safe and healthy environment, an economically competitive and innovative region and attractive and dynamic societies*. These priorities comply with ERDF Regulation Article 6.1, which outlines the main areas of intervention for Cross-Border Co-operation 2007-2013: the development of cross-border economic, social and environmental activities. The priorities also concur with the EU strategy for sustainable development, the Gothenburg agenda, which recognizes that economic growth, social inclusion and environmental protection are to be included in all activities in the long run. Sustainable development is regarded as one of the horizontal objectives In the Central Baltic Programme. (Central Baltic Interreg IVA 2009.)

Quite simply the funding programme dictates the rules within which the project will operate, be it regarding finances, activities, or reporting. The priorities of the funding programme should be reflected in the project objectives, and the funding programme follow the priorities of the structural fund. The relationships between the different levels (project, programme, structural fund are presented in the diagram below:

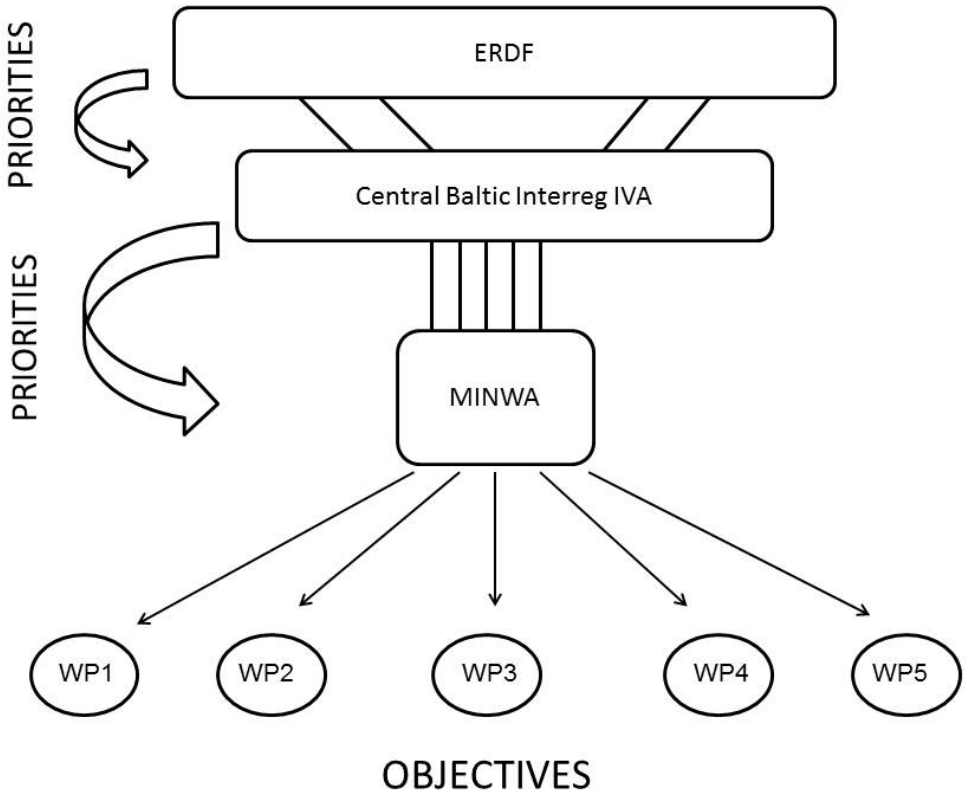

Figure 2. From priorities to objectives.

4 WASTEWATER TREATMENT IN SPARSELY POPULATED AREAS

The Baltic Sea is one of the world's largest bodies of brackish water. The special geographical, climatological, and oceanographic characteristics make the Baltic Sea ecologically unique and at the same time highly sensitive to the environmental impacts of human activities. The sea itself is burdened by the both human-induced and natural threats from the Baltic Sea catchment area, a home to more than 85 million people. (Helsinki Commission 2000.)

Nutrients such as phosphorus are essential for the functioning of ecosystems. When the amount of nutrients exceeds certain limits, problems occur. Once an oligotrophic, clear-water sea, the Baltic Sea has slowly turned into an eutrophic marine environment since the 1800s. The change has been due to eutrophication – in part induced by natural processes, but more and more by human activity induced pollution. (Helsinki Commission 2011, 12.)

Even in westernized countries, wastewater management both in cities and in rural areas is still lacking in many areas. In Finland some 20 % of the population, around a million people, still lives in houses that are not connected to centralized sewarage systems. In practice this means that around 350,000 permanent residences and around 450,000 holiday homes have to arrange wastewater treatment on site. Even now, in 2012, many residences still either lack a proper treatment system completely or have one that is obsolete or otherwise inefficient. Nutrient loading from these obsolete systems in the sparsely populated areas is greater than the combined loading from centralized sewer networks. This loading presents a potentially detrimental effect to hygienic water quality in sparsely populated areas. (Finnish Environment Institute 2012.)

Picture 1. Algae-ridden seashore. Photo: Valonia.

4.1 EU Water Framework Directive

Increasing demand for cleaner rivers and lakes, groundwater and coastal beaches by citizens and environmental organizations led to the adoption of Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy, The EU Water Framework Directive, in October 2000. Some amendments have been introduced into the Directive since 2000, and the Directive is implemented in each member country through national legislation. Protecting waterways dates long back to European Union history, but it was not until the year 2000 that a frame-

work was created for harmonizing national legislations in member countries. (European Commission 2012.)

The EU Water Framework Directive established some key objectives for protecting water quality: general protection of the aquatic ecology, specific protection of unique and valuable habitats, protection of drinking water resources, and protection of bathing water. Ecological and chemical protection are the ultimate objectives, whose good status should be achieved in all member countries by 2015. Protection should apply to all waters. For the ecological and chemical protection of surface waters a general minimum chemical standard was introduced. For the protection of ground water, a somewhat different qualification has been set: broadly speaking, groundwater should not be polluted at all. Therefore it is obvious that setting chemical quality standards for groundwater would not be appropriate, as it would imply the existence of an acceptable level of pollution. At European level only very few such standards have been established for certain substances – nitrates, pesticides and biocides – which must be adhered to at all times.

4.2 National Wastewater Legislation in Finland and Estonia

As members of the European Union, Finland and Estonia both enforce the requirements of the Water Framework Directive through national legislation. In Finland, a renewal process of legislation on wastewaters in sparsely populated areas was carried through in the early 21st century. Up until year 2000, the minimum requirement for wastewater treatment as set by the Water Act (264/1961) was treatment in septic tanks. In 2004, as the Government Decree on Treating Domestic Wastewater in areas Outside Sewer Networks (542/2003) entered into effect, these requirements were greatly tightened. This so-called Onsite Wastewater System Decree set minimum standards for wastewater treatment and the planning, construction, use and maintenance of treatment systems. The decree was however repelled in early 2011 due to problems in implementation of the decree and the flared up opposition to its requirements. A new chapter on

the treatment of wastewaters in sparsely populated areas was added to the Environmental Protection Act (86/2000, amendment 196/2011) and a new Onsite Wastewater Decree (209/2011) written. The objective of the decree was still to reduce domestic wastewater emissions and environmental pollution while giving special consideration to national water protection objectives. Yet the previous purification requirements as set by decree 542/2003 for organic load, phosphorus and nitrogen were now more lenient in nature. Also some concessions were made on basis of high age of the property owner (>68 years) and certain social grounds for a maximum of five years. If only very small amounts of wastewater are generated in form of 'grey wastewaters' from kitchens and bathrooms the wastewaters may be simply released into the ground untreated. Treatment requirements were to be met by 15.3.2016. (Finnish Environment Institute 2011.)

In Estonia, the main goals of water protection are stated in the Estonian Environmental Strategy 2010 and the Estonian Environmental Protection Work Program 2004-2006. Municipal water treatment development plans are being implemented in both countries. In Estonia the new Water Act, which came into effect on 1.1. 2006, states that the municipalities must prepare a water management plan (veemajanduskava) by 1.6. 2006. No provincial water management plans are required. (MINWA.info website.) The main act regulating wastewater management and use of water as a resource in Estonia is the Water Act. There is, however, no law directly obliging for decentralized wastewater treatment. The requirements for treated wastewater are however indicated in the water permit by the local departments of Environmental Board, taking into consideration the water quality of the recipient water body and/or the groundwater protection level. (Keskkonnaministeerium 2005; Karabelnik 2011.)

Whereas in Finland the requirements set by the Onsite Wastewater Decree apply to both old and new premises, in Estonia there is no legislation concerning the waste water management of old properties in sparsely populated areas. With new properties requirements concerning wastewater treatment need to be taken into account. The improvement of waste water management in small towns and villages has also been started by renovating the existing sewerage

systems. In the present environmental plan the focus is on population centres and catchment areas. (Karabelnik 2011.)

4.3 Controversy and Politics

In Finland, an estimated million people live in areas outside municipal sewerage networks, and approximately the same number of people spend part of the year at their summer houses. Therefore it is only natural that when legislative demands are made that might cause considerable financial costs for the parties at issue, controversy will arise. The Government Decree on Treating domestic Wastewater in areas Outside Sewer Networks the (542/2003) was passed already in year 2004. A ten-year transition period was granted to allow household owners enough time to update their treatment systems to meet the requirements as set by the decree. It wasn't, however, until the transition period began to loom a few years away that strong critique arose among inhabitants in sparsely populated areas and in the media.

The purification requirements of the decree were considered too stringent, especially in regard to the benefits gained for the environment. Also the expenses that would incur on property owners from renewing the treatment systems were considered rather exorbitant. Hence, in 2009, only 10 – 15 percent of the estimated 200 000 - 250 000 properties in need of treatment system update had actually enhanced the treatment of their household wastewaters (Hajajätevesityöryhmä 2010).

In Estonia, the general feeling around tightening requirements has not met as strong an opposition as in Finland. Quite obviously wastewater treatment was not among the top priorities a nation newly re-established its independence. It wasn't until the 2000's when with Estonia's accession to the European Union the more stringent requirements needed to be integrated into Estonian national legislation. As the majority of wastewater treatment facilities originated from the Soviet Union times and had been neglected ever since independence, there

certainly was need for improvement – especially with facilities treating wastewaters in smaller communities. (Karabelnik 2011.)

Estonia is due to receive more than 3.3. billion euros of EU funding between 2007 – 2013, of which amount 1.6 billion is directed to development of the living environment, among it water management. The majority of collection zones with a population equivalent (PE) of 2000 or more – roughly 70 % of the population – are already connected to sewerage networks, and the share was planned to increase by 2011. The priority of EU funding was addressed to these collection zones up until 2009, and the focus turned upon collection zones from 50-2000 PE only recently. 30 % of Estonians live in these areas, and around 15 – 20 % of them will not be supplied with centralized sewerage systems within the next years.

5 EVALUATING MINWA PROJECT

As the implementation of the Wastewater Decree progressed more slowly than anticipated, a need for a project to facilitate the process was recognized at Turku University of Applied Sciences. At the same time the same issues were beginning to attract interest in Estonia. Partly based on these needs MINWA project was planned. The project aimed to disseminate and exchange information and know-how on wastewater treatment in sparsely populated areas within and between the two countries, to arrange counseling on wastewater-related issues, educate and train as well as research the functioning of small-scale wastewater treatment plants.

MINWA began in January 2009 and was concluded in April 2012. The project was coordinated by Turku University of Applied Sciences (TUAS). Other partners were Valonia and University of Turku (UTU) in Finland, and University of Tartu Türi College (TC), Association of Local Authorities of Järva County (JOL), Türi Vesi OÜ and aqua consult baltic OÜ (acb) in Estonia. In Finland the project target area comprised 26 municipalities in South-West Finland: Askainen, Halikko, Kaarina, Kustavi, Laitila, Lemu, Lieto, Loimaa, Masku, Merimasku, Mynämäki, Naantali, Paimio, Parainen, Pertteli, Piikkiö, Pyhäranta, Raisio, Salo, Sauvo, Taivassalo, Turku, Uusikaupunki, Vahto, Vehmaa and Velkua. In Estonia the target area covered 11 municipalities in Järva county: Albu, Ambla, Imavere, Järva-Jaani, Kareda, Koeru, Koigi, Paide, Roosna-Alliku, Türi and Väätsa.

MINWA aimed to promote wastewater treatment in sparsely populated areas with four main focus areas: education, counseling, treatment plant functionality research and sludge utilization. Cooperation and exchange of information on these themes was planned to profit both countries. High-quality planning, installation and service of small-scale treatment systems would be promoted by developing education and training in the field. Developing counseling in the field was seen as an important factor in reaching the 2014 (and later the 2016) tar-

get. Another important challenge arose from the developing of research activities in the field, as well as sludge utilization. (Leskinen & Hovirinta 2012, 9-10.)

In Estonia the situation with wastewater treatment in rural areas is very different from the situation in Finland. The construction of municipal treatment plants is well underway, whereas treatment needs in rural areas have only recently begun to attract interest among inhabitants, entrepreneurs and even officials. A good example of this situation is the fact that whereas in the beginning of the project MINWA counseling activities had hardly any demand, by the end of project the situation had changed completely, with for example the final seminar in attracting national attention and a great number of participants. MINWA was the first project of its kind in the field of wastewater treatment in rural areas in Estonia. (Leskinen & Hovirinta 2012, 10.)

Evaluation is by no means a straightforward or easy task. The successful selection of methods and the correct operationalization are crucial for the achievement of reliable and valid evaluation data. Both quantitative and qualitative data are needed. However, although quantitative data is often emphasized by the funding programmes, quantitative measures of goal achievement do not, in many cases, give an all-encompassing account of results.

5.1 Research Data

The data used for the purposes of this evaluation covers a wide array of both quantitative and qualitative information. Information on project goals, activities, outputs etc. was gathered from official project documents: quarter-yearly progress reports that include a description of budget as well as project activities, interim report, lists of indicators and other relevant administrational material. All outputs produced during the project were used as indicators of goal-achievement. Among these are research reports on different aspects of wastewater and sludge treatment and maintenance, which can also be utilized in evaluating qualitative goal achievement.

Some thematic, semi structured interviews were conducted to provide qualitative research data on project personnel: Project managers Ilpo Penttine, Reeda kaal, Galina Danilišina and Jussi Heikkinen. In addition to the essential project staff interviews, two experts in wastewater treatment in sparsely populated areas – Jyrki Lammila and Minna Nummelin from the Centre for Economic Development, Transport and the Environment of South-West Finland – were interviewed to provide perspective on the field of the subject-matter.

Data was amassed also by sending a questionnaire to one of the project's target groups, municipalities' environmental officials, to inquire about the effect of Valonia's counseling activities. Out of the 27 questionnaires sent by email only six were answered, however.

5.2 Research Methodology

Methodology applied will be both quantitative and qualitative in nature, depending on the specific evaluation goal in question. Some indicators of goal measurement can be expressed in numbers whereas others are more qualitative in nature, which justifies the alteration and combining of methods depending on the goal in question. The effectiveness of counseling activities, for example, could be measured by examining the number of people that have attained counseling events organized by MINWA – however, this would not tell much about the success of the counseling activity itself, that is disseminating information on small-scale wastewater treatment. Interviewing project personnel and target group members, for instance, would give a more in-depth answer to the goal realization question.

On the whole, the objectives stated in the MINWA project application are rather general. This also makes reaching valid conclusions of their fulfillment rather challenging. Evaluation is also complicated by the fact that objectively verifiable indicators used in a LogFrame matrix were not determined with MINWA prior to the evaluation. Indicators have been outlined in MINWA, but they are not all objectively verifiable. In spite of this a LogFrame of the evaluation is devised

and qualitative and quantitative data analyzed by applying the evaluation criteria described in chapter three.

6 RESEARCH RESULTS

The purpose of this work has been to evaluate the success of MINWA project from two separate, yet interrelated points of view: realization of project objectives and programme-level target realization. The evaluation was conducted in the 2011-2012, the final analysis being made after the end of the project extension period in summer 2012.

The results of MINWA evaluation are presented here. First, project target realization is assessed. For the purpose of clarity, the evaluation was conducted following the thematic division of MINWA activities into five separate work packages (WP). Next, a chapter is dedicated to the examination of quantitative indicators as stated in the project application, as well as for the review of the programme-level target realization. Possible wider scale impacts of the project are assessed in the conclusions by five evaluation criteria.

The attainment of project level targets is evaluated both in qualitative and quantitative terms. Neither is weighted above the other. Quite the opposite, quantitative and qualitative measures are considered to complement each other. Using both measures is considered to add weight to the credibility of this evaluation. And as Robson (2001) stated, in order to assure the procurement of reliable data at least two different methods for data collection should be applied.

6.1 Qualitative Analysis by Work Packages

The qualitative analysis of project activities focuses on analyzing the results and outputs achieved by each work package. The analysis is based on semi-structured thematic interviews of project personnel, project outputs such as research reports and official project documents. The realization of each WP's goals is examined in relation to planned objectives as stated in the project application. The contents of work packages often overlap, as do the results and

outputs. In these cases some aspects of goal realization may be scrutinized only in one work package.

6.1.1 WP1: Project Management

The strategic focus of work package 1 was the coordination and management of MINWA project. The planned result of WP1 was the successful realization of the project. The output from this work package was that all the work packages were realized in an economical manner. Thus the realization of this goal is essential when it comes to assessing cost-efficiency of project activities. The partner responsible for this WP was Turku University of Applied Sciences, involved partners Valonia, Türi College and JOL. According to the application, TUAS was responsible for the implementation of the whole project. As stated in the application, TUAS has the infrastructure and qualified personnel for the management and coordination of the project. The work packages were coordinated by partners as follows: TUAS would manage the whole project and additionally work packages 1, 2, 4 and 5 in co-operation with Türi College and UTU, VALONIA would manage work package 3 in co-operation with JOL. Türi Vesi and aqua consult baltic would co-operate mainly in work packages 2,3,4,5.

The successful realization of a project is, to a large extent, very much dependent on the success of its administration and management. Desired outputs most likely cannot be achieved without the proper planning, management and coordination of activities. In MINWA, project management consisted of both the management of each partners' own activities and the management of the whole project by the lead partner, TUAS. In practice, communication activities and sound financial control constitute the essence of project management. Communication between partners was realized with regular partner meetings (three times a year between Finnish partners, three times a year between all partners), skype meetings and steering group meetings.

The project application emphasizes financial management: the administrative and financial department of TUAS was to guarantee the sound financial man-

agement of the project. The expenditure approval and bookkeeping system of TUAS was said to guarantee the traceability, documentation and clear codification of all project-related payments. On the programme level, the project was subject to quarter-yearly progress reports reporting the financial situation as well as the activities and outputs of a given milestone. These reports were inspected by the first level controller, and at the progress report stage by the Central Baltic Interreg IVA Joint Technical Secretariat.

Success of goal realization

Evaluating the success of the project management is mainly based on information provided by the project personnel. Project managers Ilpo Penttinen, Reeda Kaal (TC) and Galina Danilišina (acb) were interviewed for this purpose. On the whole, project management succeeded in fulfilling its tasks as planned. All project managers were content with the overall running of project management activities. Internal communication by regular skype meetings and quarter-yearly partner meetings was considered very useful in keeping up-to-date with project activities by all partners.

MINWA retained a satisfactorily sound financial control throughout the project period. Two budget changes were made during the project, as allowed by the funding programme. An extension period for another four months was applied for in 2011, extending the project duration until April 2012 for TUAS, Valonia and acb. At the moment of writing, with the final progress report and payment claim still without certifying authority approval, the project budget of altogether 1 302 708,00€ was still some thousands of euros positive. No budget line or project partner exceeded its total budget.

According to all project managers, the most arduous aspect of project management by far was following the somewhat demanding requirements of project reporting. The projects are divided into four-month milestones, each of which ends with partner payment claim and activity report and a comprehensive progress report and payment claim by all partners. Especially in the beginning, when reporting requirements were more stringent, reporting efforts were experi-

enced as particularly demanding. Some of the reporting requirements by the funder were alleviated during the three-year project duration, making the management somewhat less complicated.

In terms of keeping to the budget, the long delay between costs occurring and receiving the ERDF-payment caused some difficulties to the Estonian partners. An agreement was made with JOL to make an advance payment from TUAS of the ERDF-payment each time due to a liquidity shortage. Midway into the project JOL's capacity to realize activities was deemed poor due to financial difficulties, and therefore it was decided that JOL's duties would be transferred to TC. Officially JOL however remained a partner until the end of the original project duration, December 2011. The transfer of duties did not hinder the realization of any planned activities.

When MINWA was being planned, the role of the University of Turku was mainly to facilitate communication between Finns and Estonians, as Antti Karlin, UTU project manager, was fluent in Estonian. As the partnership was formed, however, most Estonian partners turned out to be fluent in English. In retrospect it can therefore be stated that the role of UTU could have been considered more carefully, as there clearly was no direct need for a translator. Otherwise the project managers were satisfied with all aspects of the partnerships in general.

6.1.2 WP2 Education and Training

The strategic focus of work package two was education, training and dissemination of good practices in and outside the target area. Training material and training of students and staff were the planned results of this work package. Different educational and training activities were aimed at the following sub-objectives (from the project application):

- Improvement and dissemination of knowledge concerning waste water management and change of best practices between Estonia and Finland.
- Raising the level of construction, sludge handling and service and maintenance of waste water treatment systems.

- Development and widening of sustainable cross-border co-operation between educational institutes in education concerning waste water management.
- Increasing the quality and quantity of waste water guidance to inhabitants. Increase of knowledge about the impacts of handling wastewater.
- Increasing interest and strengthening positive attitude towards handling of waste water from households.

The partner responsible for this WP was Turku University of Applied Sciences, with Valonia and Türi College as involved partners.

Success of goal realization

Evaluating the success of work package two is based on interviews of project personnel and analysis of project documents. Overall the project staff was satisfied with the results of this work package both in qualitative and quantitative respects. Main objectives of developing training material and training of students and staff were all reached. Therefore it can safely by assumed that at least to some extent the quality and quantity of waste water guidance to inhabitants increased. Strengthening a positive attitude towards handling of wastewater in rural areas is another matter entirely, and will be dealt with in more detail in the concluding chapter of this thesis.

Development of training material

Both TUAS and Türi College produced educational materials for environmental studies and engineering students in the form of power point presentations on different wastewater related themes, e.g. wastewater legislation, treatment system effectiveness and the ecological effect of wastewaters. The teaching modules created in the project were provided for the use of educational institutes in the target area. In the future, the modules can also be used outside the target area and they are made available for the public in the MINWA website.

When planning the content of the teaching modules the particular needs of interest groups, such as officials and professionals in the field, were also considered. Topics included the effects of wastewaters on the environment, the treatment effectiveness of different small-scale treatment plants, service measures

and follow-up. Training materials produced were also used both at TUAS and Türi College for teaching engineering and environmental studies students. (Leskinen & Hovirinta 2012, 9.)

Internships FI –EE

During the internships, students from Finland and Estonia were to get acquainted with the waste water treatment systems in sparsely populated areas on a practical level by participating in sampling, processing of results, demonstrations and other everyday actions in the project. Three Finnish students in Estonia for one month per project year and three Estonian students in Finland for one month per project year were planned to participate in the exchange. However, it was soon realized that the number of internship students should be reduced to two, since there would not be enough work for three.

Picture 2. MINWA student assistant Maiju Hannuksela doing field work with Estonian exchange students Ats Tarto and Olav Kärner.(Photo: Annika Kunnasvirta)

Internships were rather popular both at TUAS and Türi College, gaining many applicants each year. Only during the first year, in 2009, when the launching of MINWA field work was delayed, did the students experience the exchange to not include enough activities.

Education

Educational activities in the project took the form of teacher and student exchange from Finland to Estonia and vice versa and wastewater treatment related study visits for students in both countries. The purpose of these activities was to give the staff and students in both institutes an opportunity to get acquainted with the waste water treatment processes in their own as well as the partner country.

According to project managers Reeda Kaal and Ilpo Penttinen, the realization of educational activities proceeded as planned and reached the desired outcomes. In Estonia, the teacher exchange was particularly successful as it was the first opportunity for Türi students to take courses in English in Türi. The themes featured in the student and staff exchange were also selected to fit into the curricula of the institutions by providing deeper insight into issues that were not covered in the institutions' regular curriculum.

Quite a few seminars, study visits and courses from MINWA themes were available for the students. Themes for theses were also provided from MINWA-related themes in both institutions. In both countries, a number of students did practical training as student assistants for MINWA. In Estonia, for instance, students had the possibility to get work experience as lab assistants and in field work during their studies. Getting relevant work experience in the environmental field while studying is not a given in Estonia according to Reeda Kaal. In this respect, too, this work package was successful.

Seminars

Three seminars were arranged during the project: two in Finland and one in Estonia. The Eco Toilet 2011 seminar in Turku in November 2011 focused on dry

toilets and was aimed at the public as well as professionals, featuring lectures from wastewater treatment professionals and officials from Finland and Estonia. Dry toilet use is a rising topic in Finland and was thus chosen as seminar theme. The seminar reached an audience of 80 people and some press coverage in local newspapers.

Final seminars were held in both countries. The Estonian seminar in November 2011 was and received an unprecedentedly wide audience, being practically "sold-out" with around 200 participants. The interest towards wastewater management issues at sparsely populated areas had been steadily rising in Estonia during the course of the project, but according to Reeda Kaal, the interest shown at the seminar was rather remarkable. The efforts made by project staff to market the event clearly reached its goal.

The Finnish final seminar, held in May 2012, aimed to discuss and put forward solutions for the somewhat dragging situation in wastewater treatment in Finland and to bring forth recent study results on this issue. The view of the local administration on the matter was also heard, and the panel discussion with experts presented views on reaching the 2016-target.

Training sessions for professionals

Valonia in Finland and Türi College and acb in Estonia both organized training sessions for experts in the field of wastewater treatment – planners, county environmental officials and other professionals. Training consisted of e.g. wastewater sample taking or maintenance training for septic tank operators. The training sessions aimed to introduce new information to professionals in the field and also to entice newcomers to the field.

During the last few months of the project in Estonia a great deal of interest arose toward training for specialists and operators by MINWA. These training sessions were ongoing all through the project duration, but great interest arose towards the end. First, the training was geared towards single household owners, but it was rather soon discovered that this sort of training was not really desired. Training of specialists from municipalities etc. was found to be more

productive. MINWA training was very practice-oriented, which project managers Kaal and Danilišina thought was probably the attracting factor – other similar training of the sort in Estonia has been more theoretical in nature.

6.1.3 WP3 Counseling

Overall it can be stated that improving wastewater treatment calls for a considerable input in counseling and guidance both in Finland and Estonia. Ever since the renewed legislation on wastewater management was put into effect in Finland, significant improvements have been required at many premises. Providing impartial counseling is essential for the successful implementation of the wastewater decree by the year 2016. The understanding of waste water issues among people living in sparsely populated areas is often inadequate, and also attitudes towards the more stringent requirements are sometimes negative. The need for information and guidance for property owners is very high in both countries. Also the know-how of the authorities needs to be updated.

Work package number three had its strategic focus at the inhabitants in sparsely populated areas. Establishing a continuing counseling system for inhabitants was the planned result of this work package. 12 000 individuals were planned to be reached with information. The output for this WP was that the inhabitants in the project area use the counseling system. Information and guidance for inhabitants were to be arranged by Valonia in Finland and Association of Local Authorities of Järva county, JOL, in Estonia. However, due to JOL's financial difficulties, realization of these activities was taken over by Türi College and acb.

Although Valonia in Finland had long-running experience in counseling activities, a need for development was still recognized. High-quality guidance is key in motivating the property owners not only to purchase the best suited treatment option for their premises, but also to maintain and service the system and, consequently, to reach the purification requirements as set by the Wastewater Decree. (Leskinen & Hovirinta 2012, 10.)

Www.minwa.info website was to be established in three languages: Finnish, Estonian and English. The website would serve the purpose of providing up-to-date information on different aspects of wastewater treatment in rural areas: treatment effectiveness, legislation, service and maintenance etc. Project progress would also be reported on the website.

Guidebooks for people about wastewater treatment were to be made. The topics of the guidebooks were wastewater management options in rural areas in Estonia and package plant maintenance and service booklet in Finland. Several local public meetings and work demonstrations (1-3 times in a year) were planned to all serve the purpose of informing the inhabitants in sparsely populated areas on wastewater issues. The idea of local public meetings is to inform inhabitants of suitable wastewater treatment possibilities. During these meetings different treatment methods were to be introduced and legislative questions dealt with. A telephone service at Valonia and at TC in Estonia would be established to give the inhabitants a possibility to discuss matters of wastewater treatment and receive guidance to possible problems. The greater public was to be reached at project seminars in both countries.

The central output of work package three was to be the dissemination of know-how, experiences and good practices derived from the project in Finland and Estonia to the whole program area.

Success of goal realization

Evaluating the success of work package two is based on interviews of project personnel and analysis of official project documents, as well as the MINWA final publication from 2012 (Leskinen & Hoirinta ed.). A questionnaire was also sent to the target area municipalities' environmental officials to assess the experiences from Valonia's counseling activities. The success of this work package is perhaps the most difficult one to evaluate in qualitative terms. In quantitative terms it could be said that the objective –dissemination of know-how – was reached as a certain amount of people were targeted at counseling events. Whether these encounters will lead to actions is another matter entirely – wor-

thy of its own speculation in the concluding chapter. All in all the experiences from this WP were at least very educational for the project staff, and certainly ones needed in a larger framework in both countries.

Information dissemination and guidance to inhabitants

In Finland, counseling was delivered in all the planned forms: by face-to-face guidance at local public meetings (so-called wastewater evenings) and work demonstrations; by telephone counseling (arranged twice a week); by answering questions sent by e-mail through Valonia's website; and by participating at events, such as local fairs in project area municipalities. A wastewater related exhibition was also arranged at Valonia in fall 2011. All in all 10 700 people were estimated to have been reached at these events.

Positive experiences were gained from arranging face-to-face guidance at local fairs in the project area municipalities. The wastewater evenings also attracted interest and created a relaxed atmosphere for information dissemination. Counseling by telephone and email was also rather popular with 352 contacts during the course of the project.

A questionnaire was sent to municipalities' environment officials in the South-West Finland on the February 1st 2012. The questionnaire is presented in Annex three. For the most part the municipalities regarded Valonia an important actor in the field of wastewater counseling and in disseminating information to inhabitants. The methods of counseling provided by Valonia were regarded as efficient and comprehensive. Face-to-face counseling in events and the "wastewater evenings" were regarded most popular among municipality inhabitants. On-site counseling, which was not among MINWA counseling activities, was however deemed the best possible way to deliver the message to inhabitants.

According to municipality officials, there is enough information around on wastewater treatment in sparsely populated areas; however people sometimes don't know how to locate it. On the other hand, two respondents felt that Valonia hadn't advertised its services (e.g. phone counseling, website) enough. Work

demonstrations were deemed to be suited only for professionals in the field and not so much for the regular inhabitant. All in all the officials were in the habit of guiding inhabitants with questions on wastewater issues to Valonia services.

Picture 3. Valonia wastewater counseling stand at a country fair. (Photo: Valonia)

In Estonia, with the whole field of wastewater treatment at sparsely populated areas being rather novel, counseling activities needed to be started afresh. Whereas in Finland counseling has been driven by the imminent legislative deadlines for several years now, in Estonia interest in local water quality has been nearly non-existent up until very recently. The idea of local public meetings and other counseling activities in the Estonian project area was thus not only to inform inhabitants of suitable wastewater treatment possibilities, but also about the substance matter in general.

A virtual counseling centre, the Vee-veeb was opened for counseling via telephone and e-mail in Estonia. The centre, however, did not succeed as planned at all. Only one question was posted on it, even though the Vee-veeb was ad-

vertised in local newspapers and the Järva County info portal. To compensate for the failure, several articles about wastewater treatment in sparsely populated areas were produced and published in local newspapers and municipalities' websites. This way a large number of the local population could be reached with the information.

The lack of interest in counseling was estimated to be due to the fact that in Estonian at the moment people are not yet required to arrange wastewater treatment in sparsely populated areas. However, then acb project manager Danilišina mentioned that there have been questions on the subject-matter – but that all the questions were actually aimed at the ministry of Environmental affairs. It could be thus stated that the advertising of Vee-veeb should have been done differently – it should have been advertised to the ministry, since people contact the ministry anyway for instructions. The questions to the ministry could have been then forwarded to the Vee-Web. But this fact was not known to the project personnel back at the time. Although treating wastewaters at sparsely populated areas is not obliged by law in Estonia, people are often keen on joining with the municipal sewerage system. Some people would also like to build their own treatment systems but cannot, because their property is situated in agglomerations of more than 2000 PE. The questions mostly stem from these issues. With the Water Framework Directive affecting Estonia as well, legislation for treatment of wastewaters in sparsely populated areas is being prepared as we speak, hoping to enter into force in 2021.

MINWA was the first project in Estonia to give wastewater counseling. There was no previous knowledge on suitable methods. All this goes to tell that if counseling has not been done before in a given area, it is very hard to know beforehand which sort of methods will be most successful. All things considered, the mishaps of the first counseling attempts in Estonia cannot thus be really considered failures.

Internet pages

The minwa.info –website was established within the start of the project in both countries. Information was provided in three languages: Finnish, Estonian and English, on a variety of wastewater related themes and project progress. Approximately 4600 individual visitors from 72 countries have visited site, with varying degree of time spent and rates bounced off the site. In comparison, Valonia's website attracted approximately 22 000 – 28 000 per year. It should be borne in mind, however, that Valonia is a recognized regional actor in the field and thus it would only be natural for Valonia's website to attract more attention. In retrospect it could however be concluded that the www.minwa.info website could have been advertised more, given the amount of time and effort spent on drawing up the site. The furthest contact came from Scotland, when a local official approached project manager Penttinen on permission to utilize some of the materials on minwa.info website.

The funding programme requires for projects to maintain their websites with project information until year 2015. All information on minwa.info website will thus be available for the public also in the future, contributing to the sustainability of project results.

Work demonstrations

Work demonstrations on themes such as wastewater treatment plant installation, use and maintenance were organized in cooperation with companies. Many work demonstrations were arranged, covering different types of treatment systems. During the project it was however concluded that these types of events seem to have lost their attraction among the public. Only a handful of people attend these events. The demonstrations were presented in written form and in pictures in the minwa.info website after the events, which might benefit some later on.

Counseling material – books, booklets

In Estonia, the guidebook "Reovee käitlemine hajaasutusalal. Miks ja kuiddas?" was published and gained great popularity. According to project managers Kaal and Danilišina, the guidebook can certainly be seen as one of the highlights of

the project. The guidebook has been distributed at seminars, training sessions and public meetings, and sent all over Estonia to for municipalities' environmental departments and water companies. A reprint was done for 1000 extra booklets in addition to the 1000 already distributed. Queries for the book have also come from libraries. It can therefore be stated that, even though Vee-Web failed, the guidebook has been more successful than ever anticipated.). The guidebook's easy-to-understand, users' point of view has been commended widely.

Valonia published a maintenance guide for package plant owners. The guidbooke is meant to assist package plant owners in self-directed service and maintenance. The guide has been published both as a paper version and online, on Valonia's website.

6.1.4 WP 4 Research and Development

The strategic focus of WP 4 was research and development. Research on the functioning of treatment plants and equipment was to be the main result and research reports and a follow-up book the main outputs. The responsible partner in this work package was TUAS with Valonia, Türi College, Türi Vesi OÜ and aqua consult baltic OÜ as involved partners.

Some research in the field of small-scale wastewater had already been conducted in Finland, such as Hajasampo (1998 – 2001) and Ravinnesampo (2002 – 2005) by the Finnish Environment Institute. However a need for more impartial research, independent from treatment system manufacturers still clearly exists. (Leskinen & Hovirinta 2012, 11).

Research with MINWA focused on studying the effectiveness of small-scale treatment systems and developing continuous monitoring of treatment results. Improved methods of observation of treatment results would allow for more detailed information on how different systems function in everyday use. In addition the need to develop and further the level of treatment system maintenance was one of the main goals. (Leskinen & Hovirinta 2012, 10.) Approximately 30 small

to medium sized treatment units (altogether) were originally selected from Finland and Estonia to be studied during the project.

In Finland, the functioning of several package plants at single households was investigated during the course of three years. Samples were taken both from incoming and outgoing wastewater during the first two research periods in 2009 and 2010, and from outgoing wastewater during the 2011 research period. These periods lasted from six to eight weeks and samples were taken two or three times a week. The functioning of these treatment systems in “real-life” situations, that is to say in normal everyday conditions was under scrutiny here, with the intention of finding out what sort of measures are needed on the property owner’s behalf to achieve adequate treatment results and how much certain actions by the owners cause variations in the system functioning. In Estonia, the functioning of small village treatment plants (pollution load under 2000 PE) was under scrutiny and 15 different wastewater treatment plants were to be selected for research. The goal was to find the best treatment technology that would suit the Estonian climate and to find out why some treatment plant works and some don’t.

Monitoring the functioning on treatment systems, sampling, analysis of samples, report and recommendations and increase of know-how were among the main results to be achieved in this work package. The new knowledge benefits the municipal authorities and also local people, who need background information when comparing functionality of different systems, and finally making decisions on purchase.

Picture 4. Project managers Kati Javanainen and Hannamaria Yliruusi inspecting a research site. (Photo: Olli Loisa)

Success of goal realization

All in all, the objectives of work package four were reached as planned, only with small alterations to original research site plans particularly in Finland. Some interesting discoveries on treatment plant functioning were made, among these the fact that a lot of the small-scale treatment plants are not serviced properly, and some are not even installed correctly to begin with. Research progress was described in the mid-term and final reports and publications as well as the final seminars in both countries and minwa.info and Valonia website.

In the project application it is stated that the Estonians would study 14 different wastewater treatment plants. This was, however, hard in practice, but the suitable plants were finally found. After some time of studying the plants, it was dis-

covered that the problem was not with technology but with the operators' lack of knowledge on maintenance, particular wastewater characteristics and how well the plant is dimensioned, built and operated. After this discovery it was decided that training sessions would be organized (these were covered with WP3).

Research reports

Several research reports on different aspects of wastewater treatment were published during the project in both countries and on the www.minwa.info web-site. Many of these reports explored themes that would certainly need more thorough research. Among these were, for example, themes on sludge utiliza-tion, a rather unexplored territory still in both project countries. What should be remembered is that research was only one of the project work packages – there were only a certain amount of funds available which naturally would limit the scope of research.

Field work experience for students

Research sites provided opportunities for TUAS and TC students to learn field work skills when taking wastewater samples at the sites. At TC, laboratory work on analyzing the samples also gave opportunities for students to gain practical experience related to their studies. At acb, the students had the opportunity to do their practical placement as well. Students also got themes for their research reports and thesis from MINWA-related research.

Book on self-follow-up

A self-follow-up book for operators was published both in print and digitally on the www.minwainfo website. The book was compiled by TUAS student assistant Laura Poskiparta together with Valonia and TUAS staff. The book was designed to assist package plant owners in self-management and maintenance. The book thus supports one of the findings of research activities – that proper mainte-nance and service are needed to ensure the functioning of the plant and a long operating life.

6.1.5 WP 5 Service and Maintenance

Experienced service and maintenance are of essence if treatment requirements are to be met small-scale wastewater treatment plants. During the course of the project it was clearly discovered in both countries that proper maintenance skills are not a given among treatment plant operators and owners. Sludge originating from small-scale wastewater treatment plants and its handling is also a growing concern in both countries, and certainly one in need of further development. Hence the presupposition that these aspects needed improvement was quite clearly spot on.

The strategic focus of work package five was service and maintenance of small-scale wastewater treatment plants. Improved service and maintenance was the planned result of this work package. The output was the development of a service and maintenance model. Involved partners were Valonia, Türi College, Türi Vesi OÜ and aqua consult baltic OÜ.

In Finland at the moment the only option of sludge treatment is carting the sludge to a central treatment plant. As smaller treatment plants are being closed down all around, distances for sludge transport grow, bringing with them extra costs for the property owner. Mapping out alternative, more cost-efficient ways of sludge treatment and utilization was thus in order.

The activities in this WP aimed at the development of a proper maintenance model. The possibilities and the development of the handling of sludge from wastewater treatment plants were also to be addressed. Relevant issues for sufficient maintenance and the state of self-control and service of waste water treatment system were to be mapped out. Reports and recommendations on different sludge related issues were to be devised during the project, e.g. the handling and concentration of different particles in sludge of on-site wastewater treatment plants and septic tanks. Samples were to be collected from on-site waste water treatment systems and analyzed in laboratory.

Success of goal realization

All in all the service and maintenance activities can be said to have resulted in useful outputs, and the work package in question reached its stated goals satisfactorily. The possibility for improved service and maintenance can at least be achieved through the research done and the materials produced in both countries. Particularly the studies made on different aspects of sludge handling added new information to the field. In this work package the effects of the activities are of course rather local. Through the partner organizations' websites and the MINWA website the results can however be distributed further and more people reached, adding to valorization, or the longer-term sustainability of a policy or a programme.

In Estonia, sludge handling was studied more carefully with the 14 waste water treatment plants that were studied under WP4. The problem with sludge handling was that most of the treatment plant owners did not want to use chemicals for phosphorus removal. They were afraid that using chemicals for phosphorus precipitation would increase the amount of sludge generated. Sludge handling in Estonia is expensive, making the concern well founded. A suitable chemical concentration was calculated and an economic analysis made for each treatment plant during the project. In the end, treatment plant owners could be convinced that phosphorus removal is very important and that the amount of additional sludge is not considerable.

Reports on service and maintenance

Several research reports on different aspects of sludge utilization were devised during the project. The characteristics of septic tank sludge were investigated as well as the placing of septic tank sludge in South-West Finland, to name but a few topics. These reports were uploaded on the MINWA website.

Work demonstrations

The work demonstrations in Finland gave an opportunity for local people to survey the installation or maintenance of small-scale wastewater treatment plants. The demonstrations will hopefully improve the maintenance standard of future units installed – a crucial factor in reaching the required purification results.

However, as concluded in the work package three analysis, these demonstrations do not seem to interest people as much as one would hope. The success of these events was only moderate.

Picture 5. Work demonstration on Fann Nordkalk 8 in the summer of 2009. (Photo: Valonia)

Service and maintenance model

Laura Poskiparta from TUAS with Valonia devised the service and maintenance guide for package plant owners, which was covered in more detail in WP3.

6.2 Quantitative Analysis

The Central Baltic Interreg IVA funding programme has set out certain target indicators for each funded project. With MINWA, these indicators were determined and fulfilled as follows:

Table 2. Quantitative indicators in MINWA

Indicator	Goal	Realization
Seminars	6	8
Demonstrations	6	9
Public meetings (Estonia/Finland)	30/50	<30/>50
Publications	3	3
Books/booklets	4	4
Research reports	9	25
Activity reports	9	9
Training material packages	7	7

In quantitative terms, the project has attained the goals that were set in the application to a large extent. No significant deviations were made from the quantitative objectives. However the quantitative indicators set at the application stage deserve some criticism – it hasn't been determined, for example, what qualifies as a research report or a publication. Hence there are some discrepancies between what each partner has described as an output. In other words, the indicators named in the project application differ from those recorded by the partners. Despite the inconsistencies in accounting for different indicators, there were however more outputs delivered than was promised in the project application. In this sense the quantitative objectives can safely be said to have been reached. Nevertheless, for the sake of clarity the qualities of each output should have been more carefully decided upon at the onset of the project.

6.3 Attainmant of Programme Level targets

The main programme level target in Central Baltic Interreg IVA programme relating to MINWA project is priority 1: Safe and healthy environment. This priority focuses on protecting and improving our common environment and puts a special focus on the Baltic Sea. The priority supports a sustainable environmental development of the programme area. (Central Baltic Interreg IVA.) As to the common indicators of programme level targets, MINWA was to promote the following (according to the project application). Below each indicator a qualitative assessment of the success of each indicator in relation to MINWA is presented.

The project:

- Involves universities / higher education institutes
  - This indicator holds true. Higher education institutes were involved in both project countries.
- Involves technology institutes and SMEs
  - Technology institute and an SME were both involved (Tarto University Türi College and aqua consult Baltic, respectively).
- Improves waste management services
  - Wastewater management in sparsely populated areas was the main field of development in the project. With the research and service and maintenance function this indicator has been successful.
- Targets to prevent risks (e.g. environmental risks)
  - Pollution-related environmental risks from insufficiently treated wastewaters are a serious threat in sparsely populated areas. As MINWA aimed to enhance the level of know-how and thus the level of treatment, this indicator can be said to have been met.
- Encourages the development of cross-border trade
  - Doesn’t really apply to the project although was mentioned as an indicator. As far as to the evaluator’s knowledge, no actual cross-border trade related activities were carried through. Wastewater treatment know-how and treatment unit trade promotion could have indicated this.
- Develops joint use of infrastructure

  - This indicator can be said to have been met with the research on village treatment plants in Estonia. In Finland, such joint solutions for wastewater treatment were not explored.
- Develops collaboration in the field of public services
  - Collaboration in the field of public services was not one of the development fields in this project, unless the jointly planned website can be deemed one.
- Reduces isolation through improved access to transport, ICT networks and services
  - Access to transport, ICT networks and services was not one of the develpoment fields in this project.
- Encourages and improves the joint protection and management of environment
  - This indicator holds true in both countries.

The safe and healthy environment priority was also indicated by quantitative terms. Overall these targets were reached satisfactorily. The realization of these indicators is described in the following chapter.

6.4 Indicators for Sub-programmes and Directions of Support

According to the the Project Applicant's Programme Manual (Central Baltic Interreg IVA 2009, 21-22), each project must meet the chosen common priority of the Central Baltic INTERREG IV A Programme 2007-2013 and its specific focus deriving from the geographical and thematic needs and opportunities of the chosen (sub-)programme in which the project is implemented. For MINWA in the Southern Finland – Estonia subprogramme these were the following (completed with realization numbers):

Table 3. MINWA policy objectives and their fulfillment

Priority 1. Safe and healthy Environment *Maintaining and improving the condition of the natural environment*				
	Indicator	**Comment**	***Target Value***	***Result***
Output indicators	*New environmental cooperations established*	*Number of co-operations*	35	184
	Further developed environmental cooperations	*Number of co-operations*	38	57
	Organizations involved in co-operations	*One org. can be counted several times as long as there are different co-operations*	200	61
	Education or information activities on environmental awareness raising	*Number of activities*	270	240
Result indicators	*Co-operations and networks sustainable when ERDF funding ends*	*Number of co-operations/networks*	15/15	32/26
	Actions performed by the co-operations to reduce the risk or effects of accidents in the Gulf of Finland	*Number of actions*	-	-
	Participation in education or information activities	*Number of men/women*	6100/ 3000	5299/ 4214

Priority 1. focuses on protecting and improving our common environment and puts a special focus on the Baltic Sea. The priority thus supports a sustainable environmental development of the programme area. Beneficiaries of priority 1. include municipalities, regions, authorities and other public organisations; universities, research institutions, environmental organisations and NGO's.

MINWA project certainly contributes to priority 1 objectives by supporting environmental education and awareness-raising. And, more importantly, awareness-raising is linked to practical action, as required by Central Baltic Interreg IVA programme. A focal emphasis is given for the prevention of future problems and environmental risks with the aim of developing wastewater management in rural areas with different measures. As MINWA beneficiaries include most of the above mentioned (municipalities, regions, authorities and other public organisations; universities, research institutions), the priority can be regarded as having received correct aiming in the project.

Again, only quantitative indicators were specified for reaching the programme policy objectives as mentioned in the application. For the most part, these indi-

cators were reached and some even surpassed in significant amounts. In terms of result indicators, assessing the sustainability of co-operations and networks in quantitative numbers is in my opinion questionable – the quality of the co-operation/network should be given primary emphasis. Anyway the sustainability cannot really be estimated at the time of writing this thesis, as the project only finished four months ago. All in all it can be stated that actions taken under this priority did lead to increased environmental awareness and reduced risk of environmental disasters within the programme area at least to a large extent.

6.5 Cross-border Added Value

In general, projects should address a common problem or strategic question, which the project partners then try and solve by applying a cross-border approach. The project application states as follows:

Due to different procedures, the two countries have a lot to give to each other and to adapt it in local conditions. In Finland, the increase of water closets is causing new problems in the nutrient load of waters in sparsely populated areas. Local conditions, geological conditions and procedures are different, and so both countries have a lot to learn from each other. […] The practices in Estonia and Finland can in the future be together directed towards prevention of waste waters. […] Joint actions between the two countries will also enhance co-operation as well as the internationalization process of the companies.

According to the Project Applicant's Programme Manual (Central Baltic Interreg IVA 2009, 21), all projects that receive funding from the Central Baltic INTERREG IV A Programme 2007-2013 must have a clear impact on cross-border cooperation and vice-versa, cross-border cooperation must bring added value to the project and improve its results. Cross-border added value can be achieved by knowledge transfer, innovation and organizational learning.

With MINWA, the knowledge transfer and organizational learning aspects of cross-border added value were clearly fulfilled. A commonly shared agreement

among the MINWA project staff was that the transnationality element in the project worked to everybody's benefit. Information dissemination and exchange in particular related to research and sludge issues, as well as service and maintenance were regarded to have benefited the parties in both countries. For students the cross-border added value was clear as MINWA offered possibilities for education in form of student and staff exchanges and possibilities for participating in practical placement in the partner country. Transfer of environmental knowledge and solutions was thus facilitated, and exchange of ideas, experiences and good practices promoted organizational learning. Although the legislative and practical realities still differ in both countries, project staff experienced the cross-border effect as significant.

6.6 Cost-efficiency

The accountability of a project is an aspect not to be ignored in any evaluation. As stated by Hughes & Niewenhuis (2005), evaluating the accountability of a project is a "measuring stick" that can be used to justify the existence, proceedings and continuation of a project. Concrete requirements for cost-efficiency are not directly indicated in the Central Baltic Interreg IVA programme, nor are they included in Vedung's (2005) model of goal-attainment. However they are of essence in evaluating success in any project.

In the sense of keeping up with the budgetary limitations, MINWA did exhibit due control. Overall, then, it could be said that actions were performed and results gained in a reasonably cost-efficient manner. It should nevertheless be mentioned that a lot of the reports produced and field work carried out were done by students in both partner countries. This, naturally, reduced the costs. This should in no way be seen as a flaw – the many reports and such did, after all, provide ample opportunities for the students to accumulate study credit points and to gain valuable work experience. Student input thus contributed to the cost-efficiency of MINWA to a great extent.

During the project an observation was made that Valonia's efforts in counseling activities did not translate into wastewater treatment system planning and building as had been hoped for. Despite the fact that inhabitants did receive information about the impending requirements as set by the Wastewater Decree, they seemed to remain in waiting. This led Valonia staff to ponder upon the efficiency of different counseling methods. Valonia's MINWA project manager Jussi Heikkinen (2012, 41-44) estimated the cost-efficiency of counseling activities in the MINWA publication in 2012. It was found that the most inexpensive methods of counseling were phone and email counseling as well as "being on-call" at different types of events in municipalities. Overall it was estimated that the cost of one counseling "contact" was 33€, including all forms of counseling. When multiplied by the number of these contacts the cost of counseling for Valonia totals at 149 000 € - 46 % of Valonia's total MINWA budget. Heikkinen does, however, assert that the real cost per contact is higher than the value estimated, and that the real cost of a counseling contact in an EU-project would total at over 40 €.

These calculations are not all-encompassing, nor might they apply to all projects performing counseling activities. Nonetheless they provide a useful case in point to assessing overall cost-efficiency of MINWA project or counseling in other contexts.

7 CONCLUSIONS

This thesis set out to explore the goal-realization of MINWA project. The research questions were the following:

How succesfully have the objectives mentioned in MINWA project application been realized?

On the whole, the objectives as stated in the MINWA project application were realized satisfactorily when considering specific, work package related goals. As to the wider qualitative objectives, a more detailed assessment is presented below.

Improvement of knowledge concerning waste water management and exchange of best practices between Estonia and Finland.

Locally the level of knowledge was improved with several thousands of household owners reached, dozens of students educated and training sessions arranged for professionals in both countries. Best practice exchange took place satisfactorily between the two countries. The project succeeded in disseminating information even beyond the target area through www.minwa.info website – the furthest contact came from Scotland.

Raising the level of construction, service and maintenance of waste water management systems. Increase of waste water quality.

The level of construction, service and maintenance was raised at least to some extent locally, among professionals in the field, judging by the number of participants at training events. Whether the same effects were experienced by the common household owner is harder to estimate, especially taking into consideration the fact that the implementation of the Wastewater Decree hasn't proceeded as planned. An increase in water quality, instead, is virtually impossible to estimate, as no measurements of water quality were performed prior to the beginning of the project. And even if measurements had been made, determin-

ing whether possible improvements were due to MINWA activities would be such as hard. No unambiguous claims can be made for improved water quality. It is therefore in the potential indirect impacts from project activities – counseling, spreading of know-how, educational activities, research on wastewater treatment effectiveness and sludge treatment – where the actual target of evaluation lies.

Increase of knowledge about the impacts of handling wastewater. Increase of knowledge of inhabitants about waste water handling.

It is safe to say that knowledge on the impacts of handling wastewater increased during the project at least in the target area. In Estonia information did certainly spread also beyond the target area. This could be observed by the demand shown towards the final seminar and the wastewater guide.

Some of the planned project activities were altered during the course of the project. This should not, by any means be seen as a failure. An international, three-year-long project with no alterations would almost be an anomaly. Alterations to original project plans are only natural and even welcomed by the funding programmes, as they indicate flexibility and dynamity (Hughes and Niwenhuis 2005). Projects do not exist in a vacuum, and thus it would be naive to expect for all plans to succeed undisturbed. With MINWA, the legislative debate with the eventual invalidation brought its own spice to the realization of the project in Finland. One result of this debate was clearly the slowed demand for wastewater counseling, and, in the end, the slowing of implementation of the Onsite Wastewater System Decree.

How well do the results of MINWA project realize programme-level wider policy objectives?

The fulfillment of wider policy objectives related to *equality and environment* are rather difficult to estimate in terms of MINWA goal realization. MINWA activities were all open to different groups in the society as well as both genders, and as such didn't discriminate against anyone. Some of the activities, such as educational ones, were of course mostly geared towards young students. However it

is unrealistic to expect that a project would not have any specified target groups. With MINWA, these target groups did cover a wide array of people and thus promoted the policy objective of equality.

The policy objective of improved state of the environment was reflected in all MINWA objectives. Particularly effects on soil, water, fauna, flora and biodiversity, climate change, waste management, sustainable use and production of natural resources and environmental awareness and were evident in goal realization activities and even, to some extent, in the results achieved. The policy objective of promotion of new energy sources was however not as evident from project activities, as were not the effects on cultural heritage and living environment.

7.1 Main Findings by Evaluation Criteria

Evaluations under the European Commission funds should follow the criteria presented in chapter three. Next, the fulfillment of these criteria will be presented. The criteria reflect the information given by the project personnel and experts interviewed, and official project documents. A wider-scale approach on wastewater management issues in the two countries is also integrated in assessing these criteria. Each criteria is given a performance rating on a scale of one to four, as described in chapter three.

Relevance of a project and its objectives reflects the appropriateness of the project objectives to the problems that were supposed to be addressed, as well as the physical and policy environment of project operation. MINWA project was planned in 2008, six years prior to the 2014 deadline set by the Government Decree on Treating Domestic Wastewater in Areas Outside Sewer Networks (542/2003). In Finland the project thus addressed identified problems in the implementation of the decree: the spreading of information and know-how about the requirements of the wastewater decree, organizing training for professionals in the field and research on different methods of wastewater treatment. Due to limited resources in municipalities to address these needs, it can safely be

deemed that project-funded activities are very important to the timely implementation of the decree.

The project certainly was relevant when it was designed, and in some respects even more so now, at the time of evaluation, when approximately 350,000 permanent residences and a further 450,000 holiday homes in sparsely populated areas in Finland still lack proper treatment of their wastewaters. In 2011, however, the ongoing debate on the seemingly stringent requirements of the wastewater decree resulted in the repeal of the decree, and the passing of a new Onsite Wastewater System Decree (209/2011). (Finnish Environment Institute 2011.)

Relevance can also be said to have been achieved in terms of beneficiaries – residents in sparsely populated areas in South-West Finland and in Estonia as well as wastewater treatment professionals in both countries were addressed as planned. The project also succeeded in the teaching activities as planned.

In Estonia, project relevance is viewed from a different respect, since similar projects had actually not been implemented in the country prior to MINWA. As the stricter EU-regulations with the Water Framework Directive have found their way also to Estonia, national legislation has been forced to comply. As a consequence, wastewater treatment in rural areas has been subject to significant improvements, and will be so in the future.

Performance rating for relevance: 1.

Efficiency relates to how well the various activities in the project transformed the available resources into the intended results or outputs. Efficiency can be assessed in terms of quantitative or qualitative results as well as costs, the “value-for-money” received. Cost-efficiency is not part of the goal-attainment model by Vedung (2005), which is clearly one of the model’s shortcomings. Assessing cost-efficiency should however by no means be left to a lesser emphasis – it is, after all, a necessary part of any publicly funded project evaluation.

Evaluating cost-efficiency is not always a straightforward task. Whether or not the costs are truly justified by the benefits with the MINWA project can be safely assessed with only some of the project outputs. The cost-efficiency of Valonia's counseling activities was assessed in MINWA final publication in relation to different counseling methods and analyzed more deeply in chapter 6. Other activities, as for example teaching and research, were completed within a normal budget in both countries, using low-cost services whenever possible. The laboratory analysis of wastewater samples, for example, was subjected to a tendering process with the cost as a primary criterion. As many of the institutions involved are publicly funded, tendering processes were in order anyway with all biggest purchases.

The quality of day-to-day management is an integral part of assessing the efficiency of a project, and financial control an essential part of day-to-day management. From a pure end-result respect MINWA retained a somewhat fair control of its finances. At the end of the project, the budget remained positive. Partner-wise the financial situation of the organization itself presented obstacles for the Estonian partner JOL, which experienced problems with attaining the required national funding and was therefore forced to leave the project midway.

No explicit indicators for efficiency were chosen prior to project beginning. All quantitative targets for activities and outputs were achieved as planned – in this respect a certain efficiency criterion can be said to have been achieved. The planned activities resulted in the intended results more or less according to the project plan. However, the key question of "were things done right" could only be answered completely within a longer time span after the project was finished.

Performance rating for efficiency: 2.

Effectiveness, or how far the project results were used, expresses whether the results actually achieved the project purpose. Did the intended beneficiaries really benefit from the services provided? The main target groups of MINWA were people living in sparsely populated areas and planning to renew their treatment system, professionals in wastewater management (planners, counse-

lors etc.), and students of environmental science and sustainable development. As to the students and professionals, a verifiable benefit can be observed. However, as the counseling activities reached a fair amount of people but, at the same time, the renewal of treatment systems progressed slowly, the result of reaching inhabitants in sparsely populated areas did not really achieve the project purpose. The main project purpose was, of course, to improve water quality by decreasing waste water loads, and thus to decrease the effects eutrophication. Understandably, the real effects on the state of the Baltic Sea remain to be seen.

If one considers what difference the project made in practice, general spreading of know-how and information on wastewater issues is a clear result in Finland. In Estonia, MINWA managed to break ground in a subject-area not very well known yet, making the difference in practice even greater. Overall the success of activities in Estonia compensates for the failures in Finland.

Performance rating for effectiveness: 2.

Impact, or outcome, refers to the extent to which the benefits from the project to the target beneficiaries had a wider overall effect on people in a given area – or, in the case of MINWA, on the wider environment. The relationship between the project purpose and the overall objectives is of essence in evaluating impact.

Quite simply assessing impact deals with evaluating to what extent the planned objectives have been achieved, and, more importantly, to what extent the possible achievements were indeed results of project activities. Again, assessing actual impacts from an action as separate from some other impacts is no easy endeavor. When considering the main objective of MINWA, it is virtually impossible to prove a direct impact on the wider environment. As has already been elaborated, the process of eutrophication is exceedingly complex. Determining whether a possible improvement in the amount nutrient runoff is induced by a certain procedure is next to impossible, especially in the MINWA case, where no specific, objectively verifiable indicators were determined for measuring this possible improvement in water quality in advance. The local level effects should

thus be emphasized more when considering the benefits gained from the project. Since local level effects were indeed great in Estonia in particular, a clear impact can be proved. In Finland it remains unclear whether some positive impacts were indeed the result of MINWA activities.

Performance rating for impact: 2.

Sustainability refers to what happens after the project ends: whether the positive outcomes at purpose level are likely to continue after the project and, with it, external funding, ends. Whether the longer-term impacts related to the development process can be sustained at a wider level, beyond the target area or sector, is also at issue. Analyzing sustainability is one of the most important aspects of an evaluation.

Sustainability of environmental impacts is clearly the ultimate goal in the case of MINWA. Improved quality of water, both in relation to amount of nutrients and hygienic quality was the main objective. The outcomes that affected reaching this objective were establishing counseling, providing training, disseminating information to name but a few. As has already been established, assessing the sustainability of water quality improvement actions by measuring the quality by e.g. sampling is not really rational in this case. It is the sustainability of the concrete results which matters most – the concrete results in this case being the establishment of counseling, information dissemination in form of educational materials, guidebooks and research reports produced and research results on wastewater treatment plant system functioning. These results are, in my opinion, the ones to indicate possible sustainability beyond the project duration and target area. Eventual effects remain of course to be seen.

Performance rating for sustainability: 2.

7.2 Evaluation Validity and Objectivity

The most evident aspects which might influence the evaluation validity and objectivity in this thesis entail the use of an internal evaluator and the vagueness

of indicators applied in the planning stage of the project, as well as the overall broadness of the main goal of the project.

Assessing the quality of an evaluation thoroughly would, of course, require an altogether new evaluation. Also it can be argued what constitutes “quality” anyway – people value some aspects higher than others, and vice versa. Quality is, at least to some extent, in the eye of the beholder. Some assessment can still of course be made on the quality of the evaluation in question.

It is by no means irrelevant how or by whom evaluations are performed. Evaluations always entail an element of power, and should thus be of high quality and performed according to the highest standards (Virtanen 2007, 209). The evaluation was performed by an internal evaluator – the writer of this thesis herself. I worked as a student assistant in MINWA project for two years, from summer of 2009 until the autumn 2011. Some bias on project achievement might of course be indicated to exist, however an objective stance was aimed throughout the whole evaluation process. Also the knowledge gained while working for the project facilitated particularly the choosing of aspects to evaluate – what should be measured and how.

As a model of programme evaluation, goal-attainment evaluation is simple and explicit. As has been observed, the evaluation process begins with identifying the goals of the program and turning them into measurable objectives. It is in relation to this operationalization of objectives that problems of validity may have occurred in this thesis. Did the evaluation measure what it was supposed to measure? While the quantitative indicators that had been determined in the project application could rather smoothly be applied to particular objectives, the case with qualitative indicators is less unclear. Applying the evaluation criteria, for example, was performed mostly on basis of qualitative data and mere justified reasoning. Whether this constitutes a valid chain of reasoning and as such a conclusive answer to the evaluation questions cannot be proved by the internal evaluator herself. Yet it should be emphasized that applying merely quantitative criteria and indicators could never have produced the information needed for conducting as thorough an analysis of the project as was made. Thus it

could be stated that while the external validity – generalizability of the results – may not have been of main emphasis here, the internal validity – rigorous study design – was accomplished to a satisfying degree.

The objectivist-oriented approach, which has been applied in this thesis, has been reprimanded for lacking a real evaluative component by focusing on results instead of assessing the rationality of objectives in the first place. It is true that the main objective of MINWA, improving water quality, was far-fetched. Neither were any indicators specified for measuring the attainment of this objective. This can also be noted on the LogFrame composed of MINWA. The overall objective of MINWA is improvement of water quality by decreasing wastewater loads from sparsely populated areas. Objectively verifiable indicators had not been determined for the achievement of this objective in the project application. Thus a rather tautological “fulfillment of specific objectives as stated in the project application” was deemed to be a key indicator of achievement. Also relying on project reports as the main “source of verification”, and not detailing where the required information actually comes from, who should collect it and how frequently is a common problem with the application of the LogFrame matrix (European Commission 2004, 59). The LogFrame can be observed in annex two.

It could be stated that this evaluation has evidently been rather subjectivist in nature, relying in part on the experience gained by the evaluator herself while working in the project. The scientific method has not, however, been ignored to the least, but precise methods followed throughout the evaluative process. A lot of the results are indeed reproducible and could be repeated by anyone. In this respect at least some degree of reliability can be reached.

7.3 Wastewater Treatment in Rural Areas – Concluding Observations

The whole field of wastewater treatment in sparsely populated areas has certainly undergone some drastic measures in recent years. Growing discontent over the requirements set by the Onsite Wastewater System Decree reached a high-point in in early 2011. As a result, the wastewater decree was repealed

and replaced with more lenient requirements. In a way the discontent was understandable – the heated-up market on selling small-scale wastewater treatment systems even to people who didn't really need them had certainly earned its criticism. Information on best practices hadn't reached the greater public, leading to misguided choices and lots of money lost.

As MINWA was nearing its end in early 2012 a major source of phosphorus loading was revealed in Russia. Exceptionally high concentrations of phosphorus were detected in the late autumn of 2011 in the Gulf of Finland, the source of the emission pointing to the Fosforit industrial area in Kingisepp in the northwest of Russia. The waste gypsum storage area of the plant had been leaking phosphate into the near Luga river, which runs into the Gulf of Finland. Even though the emissions have since been blocked, suspicion remains. The Kingisepp emissions somewhat managed to reinstate an atmosphere of insignificance – many felt that it made no difference what single households or people do with their wastewaters, if the phosphorus emissions from one single factory can exceed those of the whole of Finland in a year. In this respect the incident certainly harmed the many efforts to get people involved in protecting the environment and the Baltic Sea. Even at the best of times, painstaking efforts are often required to get people to invest in their environment, especially if it involves financial loss. Thus the Kingisepp incident can not only be seen as an environmental harm, but a mental and dispiriting one as well.

As stated time and again in this thesis, the main objective of the project being rather ambitious – improving water quality by decreasing waste water loads from sparsely populated areas – it may, at this stage, be difficult to estimate whether actual improvement has taken place. The process of eutrophication is a complicated chain of events, with both human-induced and natural causes, and with mediating effects taking even years to show. Nevertheless, locally the realized effects of the project were certainly both needed and correctly directed. It remains to be seen what the situation in the field of wastewater treatment will be by the year 2016. The rate of renewing treatment systems being what it is, reaching the target may prove impossible.

As was concluded by Nummelin and Lammila (13.2.2012), there certainly is a need for project-funded wastewater counseling, education and research. In Finland, the year 2016 is looming and still thousands of households in rural areas lack adequate wastewater treatment. In Estonia, the field has only just begun to establish itself. With attitudes and emotions flying high when discussing the subject at hand, counseling by municipal actors is often seen as to be “spying” into the lives of private people. Most likely these people feel that accepting advice would get them under the eye of officials. Thus project-funded counseling is often perhaps seen as more impartial.

In Finland there have been several projects that deal with the same issues as MINWA has. A need for such projects also clearly exists because not all municipalities have either the funds or the expertise for efficient wastewater counseling and planning. Even though interest towards wastewater counseling took a great slump in 2010 – 2011, interest has somewhat been revived since. Research on wastewater treatment effectiveness and other relevant issues is also still needed, according to Nummelin and Lammila. People need up-to-date, unbiased information on the different treatment systems and methods in order to be able to make rational choices. Project funding often provides the opportunities for such research.

Among project *highlights* was certainly the popularity of MINWA activities gained in Estonia. As mentioned, MINWA was the first project of its kind in Estonia. What could have been a hard ground to brake – disseminating know-how and generating demand for training in an environment where such issues were previously nearly non-existent – succeeded beyond expectations. Some methodological and practical difficulties in the beginning aside, MINWA training and counseling reached their goals better than expected in Estonia.

While keeping in mind the main purpose of this thesis – evaluating goal-attainmet in MINWA project – it is also important to ponder upon matters not directly under investigation – namely the actual *impact* of activities realized. The long-term impact of any given activity and particularly of one that has been publicly funded should always be carefully scrutinized. As Evert Vedung (2005, 37)

stated, the two basic ingredients of goal-attainment evaluation are goal-achievement measurement and impact assessment. The key question in impact assessment is whether the results are actually produced by the project or the program in question. Of course this is often impossible to estimate within the time-scale of evaluations made. True impacts of an activity – and whether or not they are *sustainable* – can often take years to emerge. And even then, it might be difficult to pinpoint whether the impacts were the result of a particular activity by a particular project. This does not mean that impacts should not be evaluated. Quite the opposite: evaluations are needed, if not only for the accountability purpose but also, and more importantly, for the purpose of development and achieving actual, real-life impacts which may affect the life of many. MINWA project addressed a subject-matter of great importance in both its partner countries, and although longer-term impacts may not be detectable yet, produced activities and outputs certainly further the impacts and sustainability of these actions.

LIST OF REFERENCES

Literature

Cain, G. G. & Hollister, R.G. 1972. The Methodology of Evaluating Social Action Programs. In Rossi, P and Williams W. (ed.) Evaluating Social Programs. Theory, Practice and Politics. Seminar Press, New York.

Central Baltic Interreg IVA 2009. Project Applicant's Programme Manual. Version 1.0

ERDF: European Regional Development Fund 2005. Cited 23.8.2012. Updated 14.6.2006. http://europa.eu/legislation_summaries/employment_and_social_policy/job_creation_measures/l60015_en.htm

ERDF: European Regional Development Fund 2007. INTERREG IVA Programme. Guidance Note 12 on Monitoring, Reporting and Evaluation. Viitattu 28.1.2012. http://www.seupb.eu/Libraries/INTERREG_IVA_Reports_Pubs/INTERREG_IVA_Guidance_Note_12_-_Monitoring_Reporting_and_Evaluation.sflb.ashx

European Commission 1999. Project Cycle Management Training Handbook. Version 1.0. http://www.cfcu.gov.tr/SPOs/TOOLs/PCM_Training_Handbook.pdf

European Commission 2001. Evaluation in the European Commission. A Guide to the Evaluation Procedures and Structures currently Operational in the Commission's External Cooperation Programmes. http://www.globalhivmeinfo.org/Gamet/pdf/981_Evaluation%20Guidelines%20EU-1.pdf

European Commission 2004. Project Cycle Management Guidelines. Aid Delivery Methods, Volume 1.

European Commission 2012. The Eu Water Framework Directive – Integrated River Basin Management for Europe. Cited 29.8.2012. http://ec.europa.eu/environment/water/water-framework/index_en.html

Finnish Environment Institute 2011. Wastewater Treatment in Rural Areas. Updated 23.3.2012. Cited 14.6.2012. http://www.environment.fi/default.asp?contentid=408422&lan=EN

Finnish Environment Institute 2012. Vesistöjen ravinnekuormitus ja luonnonhuuhtouma. Cited 25.8.2012. http://www.ymparisto.fi/default.asp?contentid=29826&lan=fi

Fitzpatrick, J.L., Sanders, J.R. & Worthen, B.R. (1997). Program Evaluation. Aleternative Approaches and Practical Guidelines. Second edition. Logman, New York.

Hajajätevesityöryhmä 2010. Hajajätevesityöryhmän loppuraportti. Ympäristöministeriön raportteja 4/2010. Ympäristöministeriö, Helsinki.

Heikkinen, J. 2012. Ihmisille tiedoksi. Neuvontatyö MINWA-hankkeessa. In Leskinen, p. & Hovirinta, S. (ed.) Haja-asutusalueiden jätevesipäästöjen vähentäminen. Turun ammattikorkeakoulun raportteja 131.

Helsinki Commission 2000. Nutrient Pollution to the Baltic Sea in 2000. Baltic Sea Environment Proceedings No. 100. http://www.helcom.fi/stc/files/Publications/Proceedings/bsep100.pdf

Helsinki Commission 2011. Fifth Baltic Sea Pollution Load Compilation (PLC-5). Baltic Sea Environment Proceedings No. 128. http://www.helcom.fi/stc/files/Publications/Proceedings/BSEP128.pdf

Hughes, J. & Nieuwenhuis, L. 2005. A Project Manager's Guide to Evaluation. Evaluate Europe handbook Series Volume 1.

Hyttinen, N.K. 2006. Arviointi avuksi projektityöhön. Sininauhaliitto, ARVI-projekti. Helsinki.

IEG 2011. Writing Terms of Referencefor an Evaluation: A How-to Guide. http://siteresources.worldbank.org/EXTEVACAPDEV/Resources/ecd_writing_TORs.pdf

Interact 2012. Practical Handbook for Ongoing Evaluation of Territorial Cooperation Programmes. Final draft. http://www.interact-eu.net/downloads/1674/_INTERACT_Handbook___Ongoing_Evaluation_of_Territorial_Cooperation_Programmes___January_2012_.pdf

Karabelnik, K. 2011. Decentralized wastewater treatment in SPIN countries. http://www.lote.ut.ee/orb.aw/class=file/action=preview/id=1069095/Decentralised+wastewater+treatment+in+Estonia.pdf

Keränen, R. 2003. Arvioinnin tehtävät ja luonne. Työvälineet hankearvioinnin toteuttamiseen – seminaari, Finnjet 10.-11.2.2003.

Keskkonnaministeerium 2005. Pure Water – Basis for Life. Cited 27.8.2012. http://www.envir.ee/67250

Leskinen P. & Hovirinta, S. (ed.) 2012. Haja-asutusalueiden jätevesipäästöjen vähentäminen. Turun ammattikorkeakoulun raportteja 131.

Patton, M. Q. 2002. Qualitative research & evaluation methods.3rd edition. Safe Publications, Thousand Oaks (Ca).

Robson, C. 2001. Käytännön arvioinnin perusteet. Opas evaluaation tekijöille ja tilaajille. Helsinki: Tammi. Suomentanut työryhmä Lindqvist, T.; Maaniittu, M.; Niemi, E.; Paasio, P. & Paija, L.

Ross, P. & Freeman, H. 1997. Evaluation: A Systematic Approach.

Rossi, P. 1972. Testing for Success and Failure in Social Action. In Rossi, .P and Williams, W. (eds.) Evaluating Social Programs. Theory, Practice and Politics. Seminar Press, New York.

Rutman, L. (ed.) 1977. Evaluation Research Methods: A Basic Guide. Rutman

Sillanpää, K. ja Ålander, T. 2003. Arvioinnin tekeminen omin voimin. Työvälineet hankearvioinnin toteuttamiseen –seminaari, Finnjet 10.-11.2.2003.

Tanskanen, Ari & Tanskanen, Anniina. 2002. Evaluaatiotutkimus. Johdattelua tutkimusmenetelmiin – Metodologia ja tutkimus maantieteessä: seminaari 2002. Minna Tanskanen (toim.). Viitattu 16.10.2011. http://www.joensuu.fi/geo/opiskelu/lomakkeet/Johdattelua%20tutkimusmenetelmiin.pdf

Vedung, E. 2003. Arviointiaalto ja sen liikkeelle panevat voimat. Stakes, FinSoc Työpapereita 2/2003. Helsinki. Cited 10.10.2011. http://www.julkari.fi/bitstream/handle/10024/75427/tp2_03.pdf?sequence=1

Vedung, E. 2005. Public Policy and Program Evaluation. 3rd edition. New Brunswick, New Jersey, Transaction Publishers.

Virtanen, P. 2007. Arviointi. Arviointitiedon luonne, tuottaminen ja hyödyntäminen. Edita Prima Oy, Helsinki.

Worthen, B.R.; Sanders, J.R. & Fitzpatrick, J.L. 1997. Program Evaluation. Alternative Approaches and Practical Guidelines. Second edition. Longman, New York.

WWF 2005. Template for Terms of Reference for Project and Programme Evaluations. www.panda.org/.../evaluations_terms_of_reference/

Interviews

Danilišina, Galina (Project manager, aqua consult baltic). 28.11.2011, Turku

Kaal, Reeda (Project manager, Tarto University Türi College). 28.11.2011; Turku

Penttinen, Ilpo (Project manager, Turku University of applied Science)s. Several occasions in 2011-2012, Turku

Heikkinen, Jussi (Project manager, Valonia). Several occasions in 2011-2012, Turku

Lammila, Jyrki (Water management expert) and Nummelin, Minna (Water management planner). 13.2.2012, Turku

Legislation

Directive 2000/60/EC. EU Water Framework Directive. Entry into force 22.12.2002.

Decree 542/2003. Government Decree on Treating Domestic Wastewater in Areas Outside Sewer Networks. Entry into force 1.1.2004.

Act 264/1961. Water Act. Entry into force 19.5.1961.

Act 86/2000. Environmental Protection Act. Entry into force 2.4.2000.

Amendment 196/2011 to the Environmental Protection Act. Entry into force 9.3.2011.

Decree 209/2011. Government Decree on Treating Domestic Wastewater in Areas Outside Sewer Networks. Entry into force 15.3.2011.

Council Regulation (EC) No 1083/2006, laying down general provisions on the European Regional Development Fund, the European Social Fund and the Cohesion Fund and repealing Regulation (EC) No 1260/1999. Entry into force 11.6.2006

Annex 1. Terms of Reference for MINWA project.

When starting the evaluation process, the Terms of References for MINWA project evaluation were defined as follows:

Background information and rationale

The mission of the evaluation of MINWA project is to provide the project stakeholders, funders and staff with reliable information on the success of reaching the developmental goals that the project aimed to achieve. In doing so, also the cost-efficiency of these activities will be assessed. The realization of overall programme objectives will be evaluated as well, with the aim of assessing the wider-scale significance of the project in terms of developmental objectives of the funding body. The evaluation results will benefit the planning of future projects in the field of wastewater management in sparsely populated areas both in Finland and Estonia.

History of the programme/project

The funding programme in question, Central Baltic Interreg IVA, is carried out under the European Territorial Cooperation objective with the aim of promoting stronger integration of the territory. Cross-border cooperation and the exchange of best practices support the balanced and sustainable development of the territory of the European Union. The community thus offers tools through the funding programme to develop the cooperation between regions in economic, environmental and social activities.

Community horizontal objectives are an important part of the implementation of the programme. Particularly sustainable development, gender equality and anti-discrimination must be taken into account in all implementation activities – that is to say, in the implementation of each project funded. These horizontal objectives should be integrated into project activities as much as possible. In the Central Baltic Interreg IVA programme, these objectives are formulated as follows: Priority 1. Safe and Healthy environment; Priority 2: Economically compet-

itive and innovative region; Priority 3: attractive and dynamic societies. Within each sub-programme these priorities receive a specific focus according to particular geographical and thematic needs of each respective area.

The current purpose, objectives and intended outcomes of the project

MINWA is a three-year (2009 – 2011) Finnish-Estonian cooperation project, which receives 75 % of its funding from European Regional Development Fund (ERDF). This funding is channeled through Central Baltic INTERREG IV A Programme, a European territorial co-operation programme funding cross-border projects in the central Baltic Sea area consisting of parts of Estonia, Finland (incl. Åland), Latvia and Sweden. Project partners are Turku University of Applied Sciences (lead partner), Valonia and University of Turku in Finland and Tarto University Türi College, aqua consult baltic, Association of Local Authorities of Järva County and Türi Vesi in Estonia.

The main objective of the project is to improve water quality by decreasing waste water loads from sparsely populated areas and from leisure homes. Nutrient loading to the Baltic Sea is decreased and hygienic water quality improved with the decreased wastewater loads. The main objective will be achieved with the following sub-objectives:

1. Improvement and dissemination of knowledge concerning waste water management and change of best practices between Estonia and Finland.
2. Raising the level of construction, sludge handling and service and maintenance of waste water treatment systems.
3. Development and widening of sustainable cross-border co-operation in education between educational institutes concerning waste water management.
4. Increasing the quality and quantity of waste water guidance to inhabitants. Increase of knowledge about the impacts of handling wastewater.
5. Increasing interest and strengthening positive attitude towards handling of waste water from estates.

6. Promoting joint solutions and municipal society actions.
7. Research on the purification effects of existing treatment systems.
8. Developing service and maintenance of handling systems.
9. Research on the possibilities to develop handling of sludge from waste water treatment plants.

Outcomes from the project are models for common waste water treatment practices and sludge treatment, educational and training modules, the development of maintenance, service and follow-up systems as well as establishing a counseling system. Information and guidance for inhabitants is arranged throughout the project. Research results will be used in education development and small-scale wastewater treatment plant maintenance improvement. All results are to be disseminated through educational, authority and expert networks.

Specific Objectives of the Evaluation and Evaluation Questions

The purpose of this evaluation is to assess the attainment of goals of the project as mentioned in the project application. Also, the attainment of programme level wider objects will be assessed. The evaluation was commissioned by the project staff, with the purpose of obtaining valuable information on the success of the project. Mapping out the highlights and possible failures will benefit both the project staff in planning possible future projects, serving as a learning opportunity. On the other hand the evaluation will hopefully provide valuable experimental data for other projects in the same field. Especially the experiences from counseling activities have a potential significance as many similar projects are currently in process or being planned.

Gaining answers to the above-mentioned evaluation questions is important both from the project and programme point of view. Legitimacy should always be considered one of the main guiding principles of any project. Whether the project has been necessary in the first place, whether it has answered the development needs expressed in the project plan and whether all this has been done cost-efficiently are questions not to be ignored. From the programme point of view, assessing the results of individual projects and particularly the fulfillment

of the wider, programme-level objectives creates checks for the overall validity and relevance of the projects.

Scope of the evaluation

The evaluation covers the whole duration of the project – from January 2009 to end of April 2013. Each year is divided into a four-month milestone, after which follows reporting on activities and budget on each partner's part (Partner Payment Claim) and a compiled Progress Report and Payment Claim from all of the partner's activities and budget. The evaluation will focus on both the performed activities and outputs and their compliance to the project application, as well as the spending rate – whether activities performed can be deemed cost-efficient or not. The target groups of the evaluation are the project staff, cooperation partners and actors in similar projects in the field of wastewater management.

Actual real-life short and long term impacts beyond some immediate effects of e.g. certain MINWA training sessions are hard to estimate. Most often, impact-assessment is performed even years after the finish of the given activity or event. Due to the prescribed time-scale of this evaluation, impact-assessment will thus be handled only briefly. This will inevitably leave a very important aspect of analysis aside – assessing actual changes in behaviour of small-scale wastewater treatment plant plant owners, for example – however, this has been recognized necessary due to the limitations posed by schedule-related and financial factors.

The key stakeholders in the project included both universities (Turku University of Applied Sciences and University of Turku in Finland, University of Tartu in Estonia), municipal institutions (Valonia in Finland, JOL in Estonia) and private companies (Turi Vesi and acb in Estonia). All these stakeholders were responsible for the implementation of the project as stated in the application. These roles were rather clear-cut and for the most part remained functioning throughout the whole project duration.

Tasks of the evaluation:

- Assessment of the key factors underlying the successful realization of the project.
- Assessment of the general operating framework of the project – wastewater management policies in sparsely populated areas.
- Analysis of congruence between project objectives and project results.
- Analysis of congruence between programme policy objectives and project objectives

Approach and Methodology

The evaluation will be conducted by an internal evaluator. The methodological framework applied is based on the Logical Framework matrix and key evaluation criteria as set by the European Commission.

Data for the evaluation will be collected from the quarter-yearly progress reports and payment claims, research reports and publications made during the project. Interviews will be conducted on the project staff for basic information on project progress and results. Some experts on the field of wastewater management in sparsely populated areas are also interviewed to provide a wider framework for the evaluation and the debate surrounding it. A questionnaire will be sent to municipalities' environmental officials to inquire on the effectiveness of Valonia's counseling activities.

Results will be analyzed by work packages, i.e. the thematic wholes the project has been divided into. Both qualitative and quantitative assessment of project goal realization will take place. This assessment will then be concluded by issuing a score for the achievement of each evaluation criteria.

Some previous evaluations have been made on wastewater counseling and guidance activities. However to the knowledge of the evaluator, no evaluations exist on similar projects as MINWA.

Deliverables and Schedule

The evaluation study will be conducted 2011-2012, being completed in the fall of 2012. Interviews and data mapping are conducted first in late 2011 / early 2012 and the analysis carried out in the summer and autumn of 2012. The results will be published in a report and presented to the public in September 2012. Reporting language is English; however, presenting will also be conducted in Finnish.

The evaluator will meet with TUAS project manager on a regular basis to discuss the proceeding of the evaluation. Estonian project managers will be interviewed in late 2011. Later correspondence will be conducted with email.

Annex 2. Logical Framework for MINWA evaluation

MINWA	Project description	Objectively verifiable indicators of achievement	Sources and means of verification	Assumptions
Overall objective	*What are the overall broader objectives to which the project will contribute?* 1. The main objective of the project is to improve water quality by decreasing waste water loads from sparsely populated areas and from free-time settlements.	*What are the key indicators related to the wider objective?* 1. Fullfilment of specific objectives as stated in the project application	*What are the sources of information on these indicators?* Analysis of project reports and documents on project progress Indicator lists	
Specific objective	*What are the specific objective/s, which the project shall achieve?* 1. Exchange of knowledge and experience in handling of waste water in sparsely populated areas 2. Education, training and dissemination of good practices. 3. Development of models for common wastewater treatment practices, maintenance, service and follow-up systems . 4. Possibilities for sludge handling are investigated. 5. Research results are used in educational development and improving handling systems, and they are disseminated through educational and authority networks.	*What are the quantitative and qualitative indicators showing whether and to what extent the project's specific objective/s are achieved?* 1. Number of research reports published 2. Number of events organized and people reached at counseling and other communicative events 3. Quantitative and qualitative data on educational exchange and training sessions 4. Number of publications 5. Number of environmental cooperations established	*What are the sources of information on these indicators?* 1. Analysis of project reports and documents on project progress 2. Indicator lists 3. Interviews of project personnel 4. Questionnaire to municipality officials 5. Website visitor statistics	*What are the factors and conditions not under the direct control of the project which are necessary to achieve these objectives? What risks have to be considered?* 1. Wastewater legislation changed during the project duration, alleviating treatment demands. Changes in the political climate thus pose potentially significant threats to the overall significance of the MINWA project. 2. Unforeseen sources of nutrient loading were reveled during the project, making it harder even to estimate whether any water quality improvement has been achieved
Results	*List of concrete outputs/outcomes leading to the specific objective/s* 1. Training modules and educational co-operation will be arranged. Study material on waste water issues will be produced. The know-how and skills derived during the project are disseminated through the expert network. 2. A functioning counseling system to achieve the objective of providing inhabitants with better knowledge about waste water treatment systems and their applicability is created in both countries over the course of the project. 3. Research on the functioning and efficiency of different kinds of waste water treatment solutions is carried out. 4. A guidebook for treatment system maintenance and service. 5. A report describing possibilities for handling sludge from waste water treatment systems will be published for the actors.	*What are the indicators to measure whether and to what extent the project achieves the envisaged results and effects?* 1. Number of educational material produced 2. Number of training modules 3. Number of counseling events and people reached 4. Research reports - number and scope	*What are the sources of information on these indicators?* 1. Official lists of indicators 2. Progress reports	*What external factors and conditions must be realized to obtain the expected outcomes and results on schedule?*
Activities	*What are the key activities to be carried out and in what sequence in order to produce the expected results?* *1* . Establishing a counseling system 2. Develping training material 3. Arranging training sessions 4. Educational exchange 5. Carrying out wwtp research 6. Carrying out sludge research 7. Writing research reports 8. Developing a service and maintenance model	*Means:* *What are the means /inputs required to implement these activities, e.g. personnel, equipment, training, studies, supplies,?* 1. Working hours 2. Continuous monitoring equipment 3. Technical assistance	*What are the sources of information about project progress?* 1. Budget control 2. Control of acitivites	*What preconditions are required before the project starts? What conditions outside of the project's direct control have to be present for the implementation of the planned activities?* 1. A need for ww research, education and counseling exists 2. Legislative requirements prevail 3. Suitable qualified staff available 4. Funding available

Annex 3. Letter to environment officials regarding MINWA counseling activities

Hyvä kuntasi haja-asutusalueen jätevesiasioista vastaava,

Opiskelen kestävää kehitystä Turun ammattikorkeakoulussa ja teen paraikaa opinnäytetyötä ja arviointia Amk:n MINWA -hankkeesta. Hankkeen osana viimeisen kolmen vuoden aikana Valonia on antanut jätevesineuvontaa haja-asutusalueilla Varsinais-Suomen alueella. Neuvonta on siis osa MINWA-hanketta, ja neuvonnan onnistumisen arviointi osa opinnäytetyötäni.

Alla on joukko kysymyksiä, jotka liittyvät jätevesien käsittelyyn haja-asutusalueilla ja Valonian rooliin näistä asioista neuvovana, kuntien valtuuttamana tahona. Toivoisin ystävällisesti **kokemuksianne näistä Valonian neuvontatoimista**. Mielelläni kuulisin, josko kuntalaisilta on suuntaanne tullut näistä asioista palautetta.

1. Oletko saanut kyselyjä jätevesiasioista kuntasi alueella? Jos, niin miten paljon?
2. Onko kiinteistön jätevesiasioista mielestänne tarjolla riittävästi tietoa?
3. Onko kunnan asukkailta tullut palautetta Valonian antamasta jätevesineuvonnasta? Jos, niin minkälaista palautetta?
4. Mitä mieltä olet neuvonnan muodoista? (Siltä osin kuin niitä on kuntanne alueella ollut)
    a. Kylä-illat
    b. Asennusnäytökset
    c. Puhelinneuvonta
5. Tulisiko Valonian antamaa neuvontaa mielestäsi jollain tavalla muuttaa tai kehittää?

Lyhyetkin kommentit otetaan hyvin kiitollisina vastaan! Arvioimalla neuvontatoimia voimme kehittää niitä edelleen paremmiksi. Kiitos siis jo etukäteen jos ehdit vastata!