



## **Aquaculture, Fisheries & Aquatic Resource Management TN**

Final Report

Public Part

## Project information

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## Executive Summary

Aqua-tnet, a European Thematic Network funded (2008-2011) by the European Commission, Lifelong Learning Programme, was first set up in 1996 as a tightly-knit collaboration of university departments and research institutes. Ground-breaking work in educational reforms led to its emergence as the largest European network in aquaculture, fisheries and aquatic resource management. Aqua-tnet plays a leading co-operative role between higher education institutions and other partners from academic organisations, research institutions and industry. Its new phase began in 2008, with the aim of driving forward ongoing and proposed Bologna HE priorities and the parallel Copenhagen VET priorities. Its multi-faceted approach has enabled Aqua-tnet to make a real contribution to bringing together the proposed academic and vocational reforms, in its efforts to achieve greater compatibility and comparability within European systems of higher education. Aqua-tnet impacts several areas: it focuses on improving mobility, embedded doctoral programmes, generic competences, innovative ICT developments, flexible learning pathways; its inclusive approach brings industry, research and academic partners together; and its seminal role in retrieving and disseminating information on HE and VET ever changing priorities.

The size and scope of the network was structured to ensure efficient and informed development. Of its 15 Work Packages, 6 are core WPs, 4 are stakeholder WPs and 3 are Cross-cutting WPs. Good communication between the groups was ensured in the Management WP, with set protocols, clearly defined responsibilities and role accountability.

Each core WP had specific objectives, featuring consultations (online questionnaires, surveys, needs analyses), with an annual meeting to discuss project activities; the groups also communicated remotely via email and video conferencing. Annual events gave core groups the chance to present their progress to the network. In total there were three annual events.

Aqua-tnet used several media routes for effective dissemination detailed below (monthly Training News newsletter, mail shots, the education portal, the mobility platform and the human resources site – PiscesTT Jobs). As part of its 160 final deliverables, Aqua-tnet has carried out extensive surveys, developed web portals (mobility, M.Sc. and Ph.D. databases) and has updated the project website (<http://www.aquatnet.com>).

- **Training News**, a free monthly e-newsletter, reporting training developments, collaboration opportunities, upcoming events, a students' corner and marine sector information.
- **Aqua-tnet newsletters**; a free e-mail news service published monthly for the aqua-tnet network and its partners to highlight network events
- **BibMail**; a monthly overview of content tables of the major aquaculture scientific journals
- **Information of Interest**; a monthly overview of interesting publications, reports, and manuals relating to aquaculture in a broad sense, with links to files or information points
- **Project brochure**; promotional brochure with information about the new phase of Aqua-tnet circulated to the network, and at many different events.

By strengthening communication between teaching and research in order to transfer ideas, knowledge and skills, the network has drawn together education and research. By means of its multi-disciplinary and multi-stakeholder forum which allowed all stakeholders to have input into new developments, the workforce has been helped and the goal of maintaining a sustainable sector was supported. The network has improved student and staff mobility through increasing the uptake of EC opportunities (LLP, Marie Curie) and has improved interaction between sending and host organisations using the updated web portal.

The network has made a real impact in raising awareness of the Bologna reforms not only in academia but through gaining support from other stakeholders for its inclusive approach and has ensured that the project achieved its objectives.

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# 1. Project Objectives

The objectives of Aqua-tnet were diverse and on various levels. Overall, Aqua-tnet aimed to contribute to the realisation of the European Higher Education Area (EHEA) and the current Bologna Process priorities, bringing together the academic and vocational aspects of the Bologna reforms in an effort to create greater compatibility and comparability of the systems of higher education in Europe. To this end, each Aqua-tnet Work Package had its specific objectives tailored to contribute to this overall aim.

In Work Packages 1, 2 and 3 Aqua-tnet has continued to support increased cooperation in European Masters (WP1), PhD.(WP2) programmes and Mobility (WP3) by updating and maintaining a database with information about available educational programmes within the Aqua-tnet domain in Europe, now the very attractive Aqua-tnet Education Gate. It allows searches to be made in respect of institutions, people, MSc. courses and programmes as well as PhD. courses. This amalgamation of MSc. and PhD. information has been developed since the Interim Report. Similarly, the network has worked towards increased cooperation in respect of PhD. curriculum development. The existing PhD. portal, a valuable information and research tool for Aqua-tnet members, was updated and integrated with the Master database portal as described above, so that the network can further enhance and promote innovative course provisions for both Bologna cycles, keeping up-to-date with the latest developments. These portals also contain a database of doctoral theses. The stated aims have all been carried out as part of the updating process or as part of the work carried out behind the scenes at the three Annual Events. These were: to bring PhD supervisors together to identify common elements required by the new taught components of PhD programmes with a view to sharing courses and resources and up-skilling of lecturers to deliver such elements; to carry out a review of current PhD methodologies/experimental design with a view to standardising techniques; to review the content of certain PhD courses available in the Aqua-tnet domain; to bring partners (University + Research Institutes/Industrial Partners) together to identify where new multidisciplinary PhD programmes are needed; to facilitate the interaction between PhD student and PhD supervisor with the aim of evaluating and possibly upgrading draft PhD programmes (in accordance with Bologna recommendations).

The network aims to encourage a substantial increase in general student and staff mobility throughout Europe, by providing information and resources to increase the mobility opportunities within the network domain. One of the main EU objectives in Lifelong Learning policy is to improve the quality and increase the volume of students and teaching staff mobility throughout Europe.

Thus, the aims of WP3 have also been met in the above respect: i.e., to further develop the mobility portal developed in phase one as a main instrument to facilitate mobility opportunities; to shorten the steps between those who want to go on placements and host organisations as a mechanism for encouraging greater uptake; to involve research institutes as well as companies in the mobility framework by means of better identification, better information and opportunities; and to include movers from vocational and lifelong learning origin in the network domain areas. Interaction between sending and host organisations has been vastly improved via the dedicated project web portal.

Work Package 4 concerning Generic Skills and competences carried out an extensive and very well-documented survey by means of four questionnaires targeting different user groups. The results is an excellent full-length study which will be of real benefit in the future, given the importance now being given to what are also called the transversal skills (in the ESCO (European Skills/competences, qualifications and Occupations) jargon).

The objective of Work Package 5 (Innovation in teaching) was to enhance the quality of teaching through identification and promotion of best practice and enabling further innovation through collaboration and use of ICT. Focus remains primarily on supporting the EU strategy for sustainable development of aquaculture by improving capacity for innovation through human resource development. It has stimulated specific actions in the aquatic resources sector (several workshops on creating multimedia tools (videos, podcasts, collaborative tools, creation of surveys) to help to achieve EU policy on the development of lifelong learning opportunities and the better use of ICT for improving the quality and access to higher education. State-of-the-art developments in new pedagogy and technologies were disseminated as above, with an excellent end result of linkages and collaboration between teachers and learners being enhanced.

Aqua-tnet has also contributed to the updating of skills and qualifications of the workforce in the Aqua-tnet domain in its Work Package 6 concerned with lifelong learning. While formal education is an essential part of lifelong learning, the acquisition of knowledge, skills and wider competences at the workplace, is also important. Yet a more systematic development of flexible learning paths to support lifelong learning is needed. Aqua-tnet has provided this within its Masters and PhD portal which also gives details of other courses not necessarily part of the academic world, with the industrial partners who cooperate in these courses.

Aqua-tnet has also worked in cooperation with ongoing initiatives, such as the European Qualifications Framework (EQF), to enable partner institutions to contribute to the updating of their workers' skills and qualifications. Aqua-tnet partners with previous experience in these fields have collated new information new partners both to understand and to meet their obligations in this relatively new area. In particular, the developments within the EUA Charter of Lifelong Learning have been disseminated and promoted in a specific survey and review which has some interesting results concerning the comparative success of this, in relation to overall European university trends.

Aqua-tnet has developed new approaches and online support tools for promoting student exchanges and Lifelong Learning through language skills. Language training is considered an increasingly important issue, and Work Package 7 (Multilingual Issues in International Cooperation & Lifelong Learning) has done its bit towards implementing the EU recommendations for language learning in higher education in the light of The Action Plan for Language Learning and Linguistic Diversity.

The network has a multi-disciplinary and multi-stakeholder forum providing opportunities for all stakeholders to have input into the development of the workforce helping to maintain a sustainable sector. Within the network we have been able to draw together education and research, which should strengthen communication between teaching and research in order to transfer ideas, knowledge and skills through research institutes taking an active part in the network.

The network has made an impact in several areas: its ongoing work on the educational priorities as signalled in the London and Helsinki communiqués gives much-needed input to Aqua-tnet's Higher Education and Vocational Education and Training partners; its inclusive approach brings industry, research and academic partners together to prepare joint resolutions concerning new developments; its emphasis on improving mobility, embedded doctoral programmes, as well as flexible learning pathways geared towards the promotion of life-long learning in its many aspects.

The project has catered and continues to cater for two levels of beneficiaries: on the network level, Aqua-tnet generates outputs for the benefit of all universities and higher education providers that are members of the network; on the overall level, the project also includes industry, consumers and research institutes. In order to adequately meet the needs of these

various target groups, each core work package featured consultations (online questionnaires, surveys, needs analysis). Furthermore, stakeholder needs have been the central issue of the specific stakeholder work packages, as has been shown above.

## 2. Project Approach

Aqua-tnet used a multi-faceted approach to enable it to make a real contribution to uniting academic and vocational aspects of the Bologna reforms, aiming for greater compatibility and comparability of the systems of higher education in Europe. The size and scope of the network was structured to ensure efficient and informed development. To ensure that there was maximum communication between the different groups, fifteen work packages were set up, of which 6 core Work Packages, 4 stakeholder representative Work Packages and 3 Cross-cutting Work Packages. In addition there were 2 management Work Packages; Project Management covering the monitoring and management of the network, and Exploitation of results, which defined how the network exploited results including details of an exploitation plan and indicators to measure results. A clear logical structure for integration between Development Work Packages and the crosscutting horizontal and stakeholder Work Packages was set up. The Cross-cutting Work Packages ensured integration of languages, dissemination and ICT, and stakeholders were involved from conception to implementation of project activities. Each year an innovative Annual Event was organised, which ensured a two-way interaction between all network sections.

A) Core Work packages						B) Cross-Cutting Work packages
<b>WP1</b> MSc Core Group	<b>WP2</b> PhD Core Group	<b>WP3</b> Mobility	<b>WP4</b> New Generic skills and competences approaches	<b>WP5</b> Innovation in Teaching Methods	<b>WP6</b> Positioning Lifelong Learning	<b>WP7 -CC1</b> Multilingual Issues in International Cooperation & Lifelong Learning
						<b>WP8 - CC2</b> ICT Advisory Group
<b>C) Stakeholder Representative Work packages</b>						<b>WP9 - CC3</b> Dissemination and Outreach
<b>WP 10</b> Research Institutes	<b>WP 11</b> Industry Partners	<b>WP12</b> Consumer and Societal Issues	<b>WP13</b> Student Association			

Working methodologies of the core groups involved the organisation of a WP core group meeting each year, as well as meeting during the Annual Events, where they presented their progress to the whole network. During the Annual Events, core groups were given the opportunity to engage with the Stakeholder Work Package's to ensure the Work Package was meeting the needs of stakeholders. The relevant stakeholders were given the opportunity to debate their issues making sure their voice was heard in education matters. When needed, in between meetings the Work Package members communicated remotely via email and video conferencing.

Aqua-tnet represents a significant size partnership with 94 partners from 27 states, which builds upon previous work done since 1996. The network has a proven track record continuing to facilitate and prioritise increased communication (Educators – Educators) + (Educators – Stakeholders) whilst also producing high quality services and outputs. An

information-rich web portal for the network was created – [www.aquatnet.com](http://www.aquatnet.com) - containing a range of services facilitating excellent information dissemination and exchange.

The Aqua-tnet Education Gate, an innovatory part of the network website, hosts several databases and information portals: the European Masters database, extended with more functionality; the Ph.D. database including detailed information on specific Ph.D. courses and also featuring partner universities' doctoral theses; and a mobility portal as the main instrument to facilitate mobility opportunities. An online helpdesk to channel ICT related questions from the project partners was also developed as part of the portal.

Pedagogical methodologies used in the project are:

- Flexible learning methodology for online and remote course delivery
- Stakeholder involvement in course delivery
- Problem-solving/best practice/knowledge to overcome current challenges

Several questionnaires, surveys and analyses were developed during the course of the project, in order to identify real needs and challenges of the network partners. A survey of current network Master's thesis requirements was carried out in order to identify similarities and dissimilarities in procedures; this survey made recommendations to increase transparency thus leading to reduction in the disparity of awards. To identify generic skills necessary for success in the Aqua-tnet industry, an extensive survey of relevant stakeholder groups (academics delivering generic skill teaching, (postgraduate) students, industry and other employers) was carried out, and views were synthesised. Another survey carried out characterised current teaching and assessment methods used, identified existing interactions with external stakeholders, and detected trends and identified activity and interest in developing and implementing innovative approaches in teaching. The work package dedicated to Lifelong Learning carried out several surveys which identified challenges and opportunities for the delivery of appropriate Lifelong Learning programmes for different sectors. Another completed survey focused on a needs analysis of student language in MSc. and PhD. programs to identify and further develop online language learning tools. Also the several stakeholder groups carried out training needs analyses with a focus on their stakeholder issues.

To ensure quality control, the network took appropriate measures by incorporating internal evaluation procedures into the design of the project methodology whereby all project partners reported to the project coordinator. The Steering Committee consisted of all work package coordinators who meet once a year to ensure the efficient running of the project. In addition an external evaluation of the project was carried out.

Quality assurance was built into the project through stakeholder participation. Their ongoing involvement in the network ensured that the work undertaken met the needs of the end-users. Regular interaction took place with the stakeholder groups who have provided input on developments and outputs.

The Aqua-tnet network has devoted a significant proportion of its activities to ensure the effective dissemination and exploitation of the role, activities and outcomes of the Aqua-tnet project. Dissemination and exploitation activities were well covered in two dedicated work packages (WP9 – Dissemination and Outreach and WP15 – Exploitation of Results). Both work packages disseminated and exploited project deliverables and more general achievements to all target end users. This ensured that network outcomes and deliverables were adopted by partner and non-partner institutions, leading to measurable impacts on the sector.

WP9, Dissemination and Outreach, ensured that projected consultations with stakeholders and end users resulted in their continuing involvement with network activities. In accordance

with work package 15, Exploitation of Results, an exploitation plan was developed. The aim of the exploitation plan was to ensure that any outcomes developed were disseminated and taken up by target audiences, even after the end of the funding period. It also helped the partnership plan for sustainability beyond the funded period. The exploitation plan was maintained and updated over the 2nd and 3rd year and was regularly reviewed at each steering meeting to ensure its effectiveness.

There are a number of dissemination channels used which includes Training News e-newsletter, Aqua-tnet newsletters; BibMail; Information of Interest; a project brochure and an information-rich web portal containing a range of services facilitating excellent information dissemination and exchange - <http://www.aquatnet.com>. All of these are detailed further in section 3. Partners also made use of their own networks to ensure that the deliverables were made known to the right target users and to ensure uptake in order to maximise the achievements of the project. Various opportunities for dissemination were also taken advantage of such as national and international events and conferences.

### 3. Project Outcomes & Results

The network had an ambitious list of deliverables for its three year duration which were achieved. The project organised various meetings including three very successful Annual Events in 2009, 2010 and 2011 which brought together all network members for stimulating debates on key issues in the sector.

A wide array of results totalling over 160 deliverables has been delivered. The project has carried out extensive surveys of target audiences, developed web portals (mobility portal, a MSc database and a PhD database) and has established a project website <http://www.aquatnet.com>.

The role and activities of the Aqua-tnet network were continually promoted through a number of publications:

- **Training News**, a free monthly e-newsletter, highlighting training developments, collaboration opportunities, upcoming events, a students' corner and more, related to the marine sector.
- **Aqua-tnet newsletters**; a free e-mail news service published monthly for the Aqua-tnet network and its partners to highlight network events
- **BibMail**; a biweekly updated overview of the content tables of the major aquaculture-relevant scientific journals
- **Information of Interest**; a biweekly updated overview of interesting publications, reports, and manuals relating to aquaculture in a broad sense, with links to the respective files or information points
- **Project brochure**; promotional brochure with information about the new phase of Aqua-tnet circulated to the network, and at events.

All products that Aqua-tnet delivers can be found on the project's website [www.aquatnet.com](http://www.aquatnet.com) or requested via [info@aquatnet.com](mailto:info@aquatnet.com).

There are a number of short-term target groups who have benefited from the end-products and results of the Aqua-tnet project:

- **Teaching staff** have benefited from network activities fostering exchange of expertise, extended European dimension, incorporation of latest research findings into lessons and lectures, and feedback from industry. Joint curriculum development and collaborative arrangements were prioritised throughout.
- **Research staff** can use the network as a tool linking the European Research Area (ERA) with the European Higher Education Area (EHEA), resulting in improved uptake of research findings in the academic community.
- **Students** The EAS-SG, the Student Group of the European Aquaculture Society took an active part in reaching students. The Aquatic E-mailing Service is a networking service for all interested students. Students have benefited by improved teaching techniques, defined transparency of qualifications, and better mobility choices to ease transition into the workforce.
- **Employers** can benefit from a better trained workforce entering the market, and from improved technology transfer between academia and industry.
- **Employees** can gain a better understanding of training opportunities through mapping systems, job possibilities, and will be able to use the training tools and products.
- **Consumers** will benefit as improved communication and collaboration between industry stakeholders will ultimately improve the end-product. Furthermore, consumers will have the opportunity to learn more about aquatic food products with

regards to health & socio-economic benefits, industrial sustainability, food quality and safety, and impact on the environment.

The achievements and outcomes, and resulting benefits for the long-term beneficiaries, were spread throughout Europe's education, research, industry and consumer sector by means of dissemination activities of the network, by active involvement in the meetings and annual events, resulting in improved curricula, transfer of knowledge from education to industry, and more care for a sustainable environment. The long-term beneficiaries include:

- The **Aquaculture, Fisheries and Aquatic Resource Management (Industry & Research) sector** that will benefit from better qualified employees, who have been educated in a system that incorporated stakeholder input from all levels and so are better prepared for the actual tasks in the industry.
- **Educators** benefit by incorporating new learning concepts and competencies that will have been gained through increased quantity and improved quality of multilateral cooperation between the different higher education institutions all over Europe within the Aqua-tnet domain, and cooperation between higher education institutions and research stakeholders and also Industry stakeholders within the Aqua-tnet domain
- **Students** already benefit from a better education system that has incorporated input from all stakeholder groups and so will be better prepared for the labour market, and immediate needs of the industry. In the educational system mobility options between universities, universities and industry, and between universities and research institutions will be considerably improved by the accessibility of information in web portals; innovative practices and innovative ICT-based practices are being incorporated; and students perceived language needs will be met by means of advanced language modules in 10 languages.
- **Consumers** will benefit as improved status and value of education will ultimately improve the end-product.

## 4. Partnerships

The project's objectives could not have been achieved without a high level of transnational cooperation through a multi-country partnership. The Aqua-tnet network is the largest European network of aquaculture and fisheries higher education organisations. It incorporates 94 partners from 27 states highlighting its wide geographical coverage. Each partner brings a national perspective of the sector and at a transnational level this enables partners to come together to achieve joint results.

The Aqua-tnet project provided the partnership with the opportunity to highlight and discuss country-specific issues and needs and promote this to a wider audience geographically distributed across Europe. This also allowed for a cross-comparison among countries to highlight similarities and differences.

Working together in such a vast European partnership has provided the partners with an invaluable opportunity to exchange experience; promoting mutual understanding, raising awareness of the diversity of approaches and cultures and the sharing of information. The resulting benefit for the whole partnership most certainly exceeds what could have been expected had partners worked in isolation.

Most core partners have been collaborating in research and education projects for more than a decade. There was a very good understanding of each other's assets yielding optimal complementarity when dividing tasks and responsibilities. The choice of work package leaders shows a good balance among this multi-disciplinary, multi-stakeholder partnership; also between established and new member countries.

Besides the short-term target groups (those who are directly involved in the project), who will obviously continue to benefit and profit from the project and its outcomes beyond its end, a much wider group has been and will continue to be reached:

- The Aquaculture, Fisheries and Aquatic Resource Management (Industry & Research) Sector: all educators, students, employers, employees and consumers in the Aqua-tnet domain.
- Educators: all teachers, trainers and other staff within higher education institutions and staff at research institutions concerned with lifelong learning issues, in the Aqua-tnet domain.
- Students: all students and trainees at tertiary level education and training, in the Aqua-tnet domain.
- Consumers, all individuals, consumers of the end-product fish

Aqua-tnet has established links with ISEKI (European Association for Integrating Food Science and Engineering Knowledge in the Food Chain) the thematic network which contributes to the realisation of the European Higher Education Area in the field of Food Studies. Aqua-tnet's wide sectoral support is also represented in the European Aquaculture Technology and Innovation Platform (EATiP) in which several of Aqua-tnet's core partners are strategic members, and in which Aqua-tnet served as a vehicle for strong relations between academic and vocational education sectors in this domain, which has strengthened the network and its services even further. This offered a new knowledge transfer pathway and a new area of impact. Its inclusion in the EATiP knowledge transfer strategy reflects the strength of its sectoral impact.

## 5. Plans for the Future

In 2011 partners of the Aqua-tnet project applied for a third phase of Aqua-tnet (Aqua-tnet3) through the Erasmus Programme. Aqua-tnet3 officially started in October 2011 and builds upon this phase and the previous phase of Aqua-tnet.

The principal aim of Aqua-tnet3 is to support the progress of the European aquaculture, fisheries and aquatic resources management sector by stimulating and supporting innovation through enhanced lifelong learning opportunities. There are various new and innovating elements which build upon the current deliverables and are targeted by Aqua-tnet3:

- To bring the network's associated project to the next level to help realise practical and coherent pathways for Lifelong Learning in the sector, based on previous LLP projects, such as the WAVE project which defined core industry competences, and the VALLA project which developed a toolset for validating unaccredited Lifelong Learning matched against the EQF.
- Aqua-TN will seek practical frameworks for helping member institutions to overcome barriers for lifelong learners and to work towards more flexible education provision that better meets the needs of individuals and contributes towards enhancing innovation within the sector. This will be achieved through developing tools to enable greater transparency in curricula, assessment criteria and definitions of sector and generic competencies.
- To contribute towards the evolution of ECVET and how it articulates with the EQF and other frameworks.
- To promote emerging "communities of interest" as important channels for informal/non-formal lifelong learning and how these articulate with formal programmes and competence frameworks. It is anticipated that work in this area will lead to real innovation in the course offerings of member institutions that better meet the needs of individual learners and improve access for industry to intellectual capital.
- To expand multilateral collaboration through physical and virtual mobility and the development of common educational materials and sharing of "learning objects." Collaboration across educational organisations will be at the forefront, linked closely with industry, policy and research organisations. This will lead to a wider range of expertise for learners and will build working relationships between academia and other sector stakeholders.
- To develop collaborative courses and materials for taught and research-based postgraduate levels, involving sharing sector-specific expertise across Europe. Developing relevant generic skills will be the focus, which are all too often overlooked in traditional academic teaching.
- To encourage and enable the use of innovative technologies and teaching approaches to help increase the quality and quantity (e.g. numbers of learners) in the face of reduced resources available to education organisations. The previous project has explored tools and methods that are now ready to be adopted in the delivery of the proposed collaborative initiatives.

These new focuses will not only bring about novel developments in the sector but will ensure the longer sustainability of the current Aqua-tnet deliverables. Furthermore,

new partners have now joined the consortium, most notably the recently established European Aquaculture Technology and Innovation Platform (EATIP) and representatives of the European and Galician Fisheries Technology Platforms, which were invited to join Aqua-tnet based on identified current and future developments in our area. Recent EC policies (EU2020, Bologna 2020) emphasise the importance of reinforcing the link between education and society, bringing together public and private sector, scientific and professional players, thereby contributing to Europe's knowledge triangle and innovation capacity so badly needed in the current economic climate. Bringing in these partners will ensure the educational institutions in the Aqua-tnet network will develop structured partnerships with the world of enterprise in order to "become significant players in the economy, able to respond better and faster to the demands of the market and to develop partnerships which harness scientific and technological knowledge".

Throughout the current Aqua-tnet phase, several dissemination activities have taken place to reach the target groups. Aqua-tnet3 will continue its effective dissemination activities through multiple outputs using a variety of media and dissemination routes (maintenance and further development of the website [www.aquatnet.com](http://www.aquatnet.com), the education portal, the mobility platform and the human resources site – PiscesTT Jobs and continuation of the monthly Training News newsletter, Aqua-tnet e-newsletter, BibMail and Information of Interest).

Aqua-tnet has always been a forum for ensuring the latest developments in training and education are developed and promoted. Given this fact, the network will continue to be of value to the industries it serves.

## 6. Contribution to EU policies

The European aquaculture and fisheries industries are sectors (as demonstrated by the EU Integrated Maritime Policy) which need to benefit from a European transnational policy. The drive to integrate European maritime policy is the public recognition of the importance of the sector, which provides some 405,000 jobs in Europe, often in remote areas with few other jobs available. It being recognised that fisheries and aquaculture are strategically important, a major challenge is how to secure their sustainability. Aqua-tnet has played a crucial role in bringing together all stakeholders to ensure that a) existing training and education resources contribute to creating a sustainable sector; b) there is a flow of information and knowledge transfer to external users with most need.

The Lisbon strategy has been replaced by the Barroso strategy for 2010, which also places education in the three most important areas for continued support. One key feature of the Lisbon strategy has however been fulfilled: the European Higher Education Area (EHEA) was formally launched on March 12 2010 at the Ministerial Meeting in Vienna. It is not too much to claim that Aqua-tnet has played an important role in pushing hard for the Bologna reforms within its sector and has also proposed ways of combining the Bologna and Copenhagen Processes (EQFs). But the evolving Bologna/Copenhagen situation, the Integrated Maritime Policy, as well as needs identified from Needs Analyses done in the previous network, demand new solutions and deliverables. Aqua-tnet's wide sectoral support is now represented in the EATiP Technology Platform offering a new knowledge transfer pathway. FEAP's involvement as representative of the industrial sector also gives opportunities for dialogue on the new Maritime Policy. Aqua-tnet now has a representative (AQUATT) on the agriculture, fisheries and aquaculture Reference Group of ESCO (European Skills/competences, qualifications and Occupations) linked with international classifications and standards, such as NACE and ISCO. These are major initiatives with real opportunities for influencing decision-makers at the highest levels.

In recent years, Aqua-tnet has taken up the task of addressing the need for a European transnational policy with respect to educational affairs, endeavouring not only to create curricular harmonisation (closely following the Bologna reforms) but also to minimise overlapping by revealing complementarities, of European players in this field, focussing on key issues such as mobility, innovation in teaching, language skills, Ph.D. and M.Sc. curricula. The educational organisation and content throughout Europe reflects the wide diversity of the sector in terms of complexity and current technology. Aqua-tnet has continued to foster the beneficial effects of this diversity by facilitating the knowledge transfer among its network partners.

Through a carefully selected range of work packages, the project has already implemented LLP policies on various fronts within the sector of aquaculture, fisheries and aquatic resources. One of the main EU objectives in Lifelong Learning policy is to improve the quality and increase the volume of students and teaching staff mobility throughout Europe. Its Education Gate, a master database which gives up-to-date information on all aquaculture and marine science courses throughout Europe, is very widely used by students. The workpackage concerned with PhD. work, has created a PhD. portal where PhD. theses from partner universities can be disseminated. The Aqua-tnet work package dedicated to 'Mobility' has, in its Mobility platform increased mobility resources for students/trainers/professionals which in turn are helping to facilitate mobility and increase opportunities and uptake at a very difficult time for mobility across Europe caused by the present financial crisis.

In the work package dedicated to 'Positioning of Lifelong Learning', effective mechanisms, such as the WAVE MASTER List of competences and the VALLA tool which enables course developers to define learning experiences where competence is acquired, such as short courses, workshops, work placements, field trips etc., in terms of learning outcomes and competences, in accordance with European principles, in a user-friendly methodology, Aqua-tnet has helped partner universities to contribute in a meaningful way, to the updating of skills & qualifications of the workforce. Aqua-tnet is engaged in the mapping of current lifelong learning practices in the sector and stimulating the enthusiasm of the network partners to adopt new applications developed by others. Matching both has already resulted in an increased offer of learning material for off-campus and on the job adult learners. Interestingly, a survey carried out under this work package showed that Aqua-tnet partner organisations had a greater take-up of and involvement in LLL initiatives than the average as reported in the Trends 2010 report.

The work package dedicated to Innovation in Teaching was focused primarily on supporting the EU strategy for sustainable development of aquaculture by improving capacity for innovation through human resource development. At the Aqua-tnet Annual Event in Faro October 2011, it carried out several workshops which aimed to stimulate specific actions in the aquatic resources sector which led to the better use of ICT for improving the quality and access to higher education by creating content for e-learning environment. These were: i) video production and sharing; ii) producing podcasts; iii) creating multimedia resources; iv) creating and analysing surveys; v) image production, editing and sharing; vi) tools for collaboration. These workshops attracted high participation and its results have already been disseminated throughout Europe.

The Crosscutting work package on languages contributes to language skills with the specific objective to facilitate international mobility; it has created a series of online language learning lessons (24) in 10 languages important for aquaculture and marine science, as well as three multilingual glossaries and has also developed a prototype Language Game as part of an induction package for exchange students.

In addition, Aqua-tnet has kept up to date with all the very fast-evolving Bologna reforms in the HE and the VET sectors, and has disseminated relevant information from EU projects such as ALLUME and SIRUS (which concerns the EUA European Charter for Lifelong Learning), and regularly disseminates relevant information to its partners.

The next Ministerial Meeting (Bucharest, April 2012) falls out with the time and scope of the present Aqua-tnet project and will be reported on later.

