



**Hellenic Center for Marine Research,
Heraklion, Crete, Greece
29-30 January 2014**

Minutes of the Kick off meeting

Objective: The objectives of the kickoff meeting (based on the DOW) included (a) review of the signed contract with the European Commission, (b) review of the Consortium Agreement (deliverable D.1.2 Consortium Agreement), (c) set up of administration and financial management procedures, and (d) planning and organizing the research activities for the project, with emphasis on those to be initiated during the 1st year, establishing, when necessary, procedures for sampling acquisition and sharing among Partners, and for exchange of scientific information.

Description: The Kickoff meeting was held at the Hellenic Center of Marine Research (P1. HCMR) in Heraklion, Crete, Greece on the 29 and 30 January 2014. The 2-day meeting was attended by 73 persons: 21 coming from the Project Coordinator's (PC) organization (HCMR) and 52 coming from the other 35 Partners. No representative was sent from three Beneficiaries (P20. SARC, P20. MAREMAR and P36. ANFACO). Beneficiaries SARC and ANFACO were unable to attend the meeting due to prior commitments that could not be changed, while Beneficiary MAREMAR has been removed from the consortium and will be substituted with another Beneficiary shortly.


Information regarding the meeting was uploaded continually on the project's web site to ensure that all participants had access to the most updated information. The Agenda (Table 1) was developed with assistance from the Group Work Package (GWP) leaders and consisted of a common session for all participants during DAY 1, and 6 Workshop Sessions running in parallel (2 sessions at a time) during DAY 2. The DAY 1 session was mainly to address management and dissemination issues, as well as to give all beneficiaries an idea of the scientific work planned in DIVERSIFY. The DAY 2 workshops were organized according to Research Areas (GWP) with the objective of planning the work to be implemented in the various scientific WPs during the first year of the project, and addressing issues of harmonization of protocols, exchange of visits and samples among beneficiaries.

DAY 1 – Morning

The morning session started with an introduction by Dr. Antonios Magoulas who is the director of the Institute of Marine Biology, Biotechnology and Aquaculture (IMBBC), which is the participating institute of the Hellenic Center of Marine Research (HCMR) in DIVERSIFY. Dr. A. Magoulas welcomed the participants to the kickoff meeting and gave a brief introduction into the history of the organization and the current activities of the institute.

The brief welcoming of IMBBC's director was followed by a personal introduction of all participating scientists in the meeting (Name, organization they represent and scientific expertise), many of whom met each other at the very first time.

**Table 1.** Agenda of the Kickoff meeting, taking place on the 28-29 January 2014, at HCMR, Crete Greece.

 DIVERSIFY
7FP-KBBE-2013-603121
Meeting Agenda

DAY 1		HCMR Auditorium			
Start	End	break	Title	Details	
9.00	9.30		Welcoming from A. Magoulas	Meeting logistics, agenda	Presentations of participants
9.30	10.00		Presentations of participants	Presentation of participants	
10.00	10.30		WP1 Management	Governing bodies, Annual meetings, interactions	
10.30	11.00		WP1 Management	Reporting, Participants Portal, Deliverables, Dissemination	
11.00	11.30	coffee			
11.30	12.00		WP1 Management	Financial issues, web site, communications, amendments	
12.00	12.30		WP1 Management	Consortium Agreement COST	
12.30	13.00		WP31 Dissemination	Web site	
13.00	13.30	Lunch	Creta Aquarium		
13.30	14.00	Lunch	Creta Aquarium		
14.00	14.30		GWP presentations 2 Repro		
14.30	15.00		GWP presentations 3 Nutrition		
15.00	15.30		GWP presentations 4 Larvae		
15.30	16.00	coffee			
16.00	16.30		GWP presentations 5 Grow out		
16.30	17.00		GWP presentations 6 Health		
17.00	17.30		GWP presentations 7 Socio		
17.30	18.00		Wrap up	Agenda for next day	Room allocations
20.00			Dinner at Parasies Restaurant		
DAY 2		Conference rooms			
Start	End	break	ROOM 1	ROOM 2	Library
9.00	9.30		GWP 4 Larva I husbandry	GWP 7 Socioeco	
9.30	10.00		GWP 4 Larva I husbandry	GWP 7 Socioeco	
10.00	10.30		GWP 4 Larva I husbandry	GWP 7 Socioeco	
10.30	11.00		GWP 4 Larva I husbandry	GWP 7 Socioeco	
11.00	11.30	coffee			
11.30	12.00		GWP 3 Nutrition	GWP 2 Repro & Genetics	
12.00	12.30		GWP 3 Nutrition	GWP 2 Repro & Genetics	
12.30	13.00		GWP 3 Nutrition	GWP 2 Repro & Genetics	Available for any group to have a meeting
13.00	13.30		GWP 3 Nutrition	GWP 2 Repro & Genetics	
13.30	14.00	Lunch	Creta Aquarium		
14.00	14.30	Lunch	Creta Aquarium		
14.30	15.00	Lunch	Creta Aquarium		
15.00	15.30		GWP 5 Grow out Husbandry	GWP 6 Fish health	
15.30	16.00		GWP 5 Grow out Husbandry	GWP 6 Fish health	
16.00	16.30		GWP 5 Grow out Husbandry	GWP 6 Fish health	
16.30	17.00		GWP 5 Grow out Husbandry	GWP 6 Fish health	
17.00	17.30	coffee			
17.30	18.00		Wrap up in Auditorium	Wrap up in Auditorium	

Regarding communications and email exchanges it was indicated by the PC that all email send will have the subject “DIVERSIFY – subject”, with the subject of the particular message. Partners were asked **not to** change the subject and reply to this message, in order to ensure that the PC receives all replies in the same folder.

All participants agreed to respond to information request by the PC within the indicated deadlines, in order to avoid repetitive emails and delays in decision-making, implementation of tasks and reporting. The deadlines were decided to be ASAP (respond within 48 h), by DATE (respond by the specified date) and if no deadline is indicated to respond within 10 working days.

The GWP leaders agreed to record and produce minutes for the DAY 2 Workshop Sessions, which would be incorporated to the minutes that the PC would prepare for the common sessions of the General Assembly. The minutes would be sent for approval to all beneficiaries and participating scientists for approval, before being available to the DG RTD Scientific Officer of DIVERSIFY.

During the WP1 Project management session (Fig. 1), there was a presentation of the appointment process and role of each governing body, and the responsibilities each one will have during the implementation of the project. Special mention was given on the role of the PC, the Administration office, the Steering Committee, the Gender officer, the Species Leaders (SL), the GWP leaders, and finally the WP Lead Beneficiaries (LB) and the Task leaders. It was explained to the participants that the implementation of the DOW will be done at the level of the WP LB, who will be responsible for the following:

- Coordinate Task leaders
 - monitor timely execution of tasks (Gantt)
 - facilitate interactions between partners
 - compile/edit interim reports and deliverables
- Management of WP
 - flow of information, responsibilities



- protocols, sample/data transfer
- Dissemination
 - liaise with PC, WP31 Dissemination, GWPLs & SLs
 - compile documents to upload on web site
 - presentations to conferences
 - interviews, news releases

An explanation of the structure of the Annual Coordination Meetings (ACM) was presented, explaining that these meetings will also have a dissemination function, as the first day will be open to selected invited participants from outside the consortium. The idea is to encourage interactions outside the DIVERSIFY Beneficiaries, in order to ensure the most rapid progress of the project by providing useful advice from the experience of people from outside the consortium. Also, the invited scientists will act in a way as a **Project Advisory Board** for the proposal, providing critical assessments of the results and planned tasks for the following period.

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- Agenda and logistics
- Presentation of participants
- WP1 Project management
 - Governing bodies (Mgmt team, Steering Committee, GWP leaders, etc.)
 - Annual coordination meetings
 - Interactions with other projects
- Reporting (Mo 12, 30, 48 and 60)
 - Participants Portal
 - Deliverables
 - Dissemination actions
- Financial issues
- Web site – intranet
- Communications
- Scientific presentations
- Amendments to DOW

Figure 1. Table of Contents of the Project Coordinator’s presentation on WP1 Project management.

The next ACM was decided to be held at the end of October or beginning of November 2014, to allow ample time for the preparation of the Periodic report, which is due at the end of the year. The 2014 ACM was proposed to be hosted by FCPCT (Dr. Daniel Montero, on behalf of the Beneficiary, since the Principle Investigator of FCPCT Dr M. Izquierdo did not attend the meeting) and was tentatively accepted. However, in one-to-one discussions during the meeting, many participants expressed their concern of having the next meeting at a distant location (*i.e.*, the Canary Islands) due to cost and travel time issues. As a result, the PC will examine other options in a more central or convenient location for the majority of the Beneficiaries. The decision on the time and location of the meeting will be taken within March 2014 to allow ample time for planning and preparation.

Special emphasis was given in the area of allocating responsibilities and developing flow-of-information structures for reporting (Deliverables, Dissemination actions and Annual reports), in an effort to streamline the process as much as possible and in anticipating potential delays. The reporting periods were explained (Mo 12, 30, 48 and 60) and all Beneficiaries were committed to complete and submit the reports within 30 days from the end of each reporting period. The objective is to (a) avoid as much as possible delays in the production of the project’s deliverables and reports and (b) to harmonize the style and content of the reporting documents among all participants. Achieving these two objectives will ensure easy evaluation of



the project's implementation and progress by both the Scientific Officer from DG-RTD, and the external reviewer(s) during the mid-term and final evaluation of the project. In addition, it will ensure prompt transfer of the interim payments from the EC to the Beneficiaries, which is important for the implementation of the work according to the time schedule of the DOW.

Along the presentation-discussion on dissemination and reporting issues, there was a brief presentation of the Participants Portal, in order to familiarize the Beneficiaries both with the obligations of and the facilities for the consortium. The submission of Deliverable was explained and a form has been prepared and uploaded on the INTRANET of the web site, in order to be used by all Beneficiaries in reporting their deliverables. A form was also described (and uploaded on the INTRANET) that will be used for listing the dissemination actions of all beneficiaries, first to the WP 31 Dissemination LB and then to the EC. Finally, a text has been prepared with the necessary logos, which will be used on all dissemination materials from DIVERSIFY.

The following statement should be included in all Dissemination material (press releases, interviews, web material, etc.)



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This 5-year-long project (2013-2018) is funded by the EC under the 7th FP, it includes 38 partners from 12 European countries –including 9 SMEs, 3 Large Enterprises, 5 professional associations and 1 Consumer NGO- and is coordinated by the Hellenic Center for Marine Research, Greece. Further information may be obtained from the project site at “www.diversifyfish.com”.

The following statement should be included in all Scientific presentations (Posters, Oral presentations and scientific articles)



This work has been carried out with financial support from the Commission of the European Communities, specific RTD programme of Framework Programme 7 (FP7-KBBE-2013-07 single stage, GA 603121 DIVERSIFY). It does not necessarily reflect its views and in no way anticipates the Commission's future policy in this area.

Figure 2. Text to be included in all dissemination material from DIVERSIFY.

Some time was spend on Financial issues, as some partners have not participated before in FP research, and it was considered important to acquaint them with these aspects. It was stressed that all Beneficiaries should make their utmost to follow the DOW in terms of the use of Resources and the provision of adequate justification and description of the expenses made, in order to avoid criticism and complications from the EC during the periodic evaluations, and to streamline the review process. Please remember that

One Partner's error, will delay the payment of the whole consortium!!!!

There was also a presentation of the project's web site, which was launched already during Mo 1, and is currently under construction with continual inclusions of new material. The web site contains information according to the species studied in DIVERSIFY as well as according to the scientific disciple (Research Area). At the time of the kickoff meeting, the web site was hosted at diversify-eu.weebly.com (which is the platform for the development of the site), but it has now been moved to www.diversifyfish.eu. The participants were presented with the INTRANET section of the web site, and its various contents, which



should be used by the Beneficiaries for the effective and efficient management of their participation in the Consortium and preparation of the Dissemination material and Deliverables. This section will be updated continually to reflect the progress of the project and the emerging needs of the project and its Beneficiaries.



Figure 3. The web site of DIVERSIFY has already been launched and is currently being uploaded with the necessary information. The INTRANET section is already complete and functional. Hosting has already been moved to the www.diversifyfish.eu domain.

A brief exchange of opinion was made regarding the process that should be followed for determining co-authorship in the scientific papers that will results from the project. General guidelines were provided by the PC, which included:

- 1st author
 - the one who writes it!
 - decides on co-authorship (or the senior scientist supervising 1st author)
- Potential coauthors:
 - participants in tasks
 - providers of samples (eggs, blood, tissues)
 - providers of analyses (hormones, nutrients, genes)
 - participants in experimental design, analysis
- Conflicts address first by WP leader, then by the SC

There was some argument whether provision of samples justifies co-authorship, and at the end it was agreed that each manuscript should be considered as a separate case, but overall there was an a agreement to the proposed general principles/guidelines.

The WP 1 Project management session finished with a presentation and a brief discussion of the Consortium Agreement (CA), which had already been circulated among beneficiaries in the previous weeks, and many had the chance to make their modifications/additions to the basic draft (Fig. 4). It was agreed that the second version of the CA that included the modifications of the beneficiaries would be circulated once more for final approval, before producing a pdf file and sending it for signatures by the Legal representatives of each beneficiary. This second version of the CA has been sent to the Beneficiaries for final approval on the 4th of February 2014.

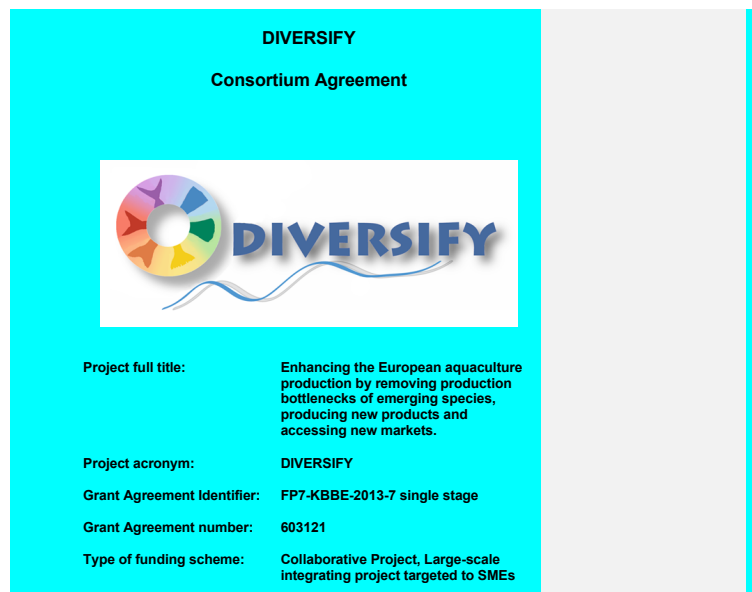


Figure 4. The first draft of the Consortium Agreement of DIVERSIFY, sent for consultation to the beneficiaries 2 weeks prior to the kickoff meeting. A second version is currently (4th February 2014) under final evaluation and approval.

Then, Dr Neil Duncan (P3. IRTA) gave a brief presentation on the proposal to submit a COST action to support the research activities of DIVERSIFY (Fig. 5). The objectives of this COST action would be (a) to link as many researchers and stakeholders as possible in the area of species and product diversification in aquaculture and (b) to support the activities of DIVERSIFY in organizing meetings, supporting Short-Term Scientific Missions (STSM) among beneficiaries and the exchange of students and research personnel. The proposal for this COST action will be submitted in the Spring of 2014.



Figure 5. A proposal was presented to the consortium to submit a COST Action to support the research activities of DIVERSIFY.



Then, some amendments to the DOW were proposed (and approved by the participants) by the PC as follows:

1. Substitute CULMAREX for MAREMAR. MAREMAR has been bought over by a subsidiary of CULMAREX and after some negotiations with the consortium, the company agreed to join DIVERSIFY with the same EU contribution and responsibilities as described in the DOW
2. Substitute Dr Aldo Corriero (UNIBA) for CC Mylonas (HCMR) as WP3 leader (Reproduction and genetics – greater amberjack). This was considered necessary due to the heavy load of the PC with management issues of the consortium, and then need to have a scientist that will be able to dedicate more time to the specific WP. Dr. Aldo Corriero is not leading any other WPs, and he is heavily involved in the various tasks of WP3, so he is quite appropriate to take the role of LB.
3. Substitute MAREMAR (out) for APROMAR in the Steering Committee. In the DOW, there was a discrepancy between the Management Chart presented in Section B2.1 and the text in the same section. In the Chart (which is what was decided at the end during the negotiation stage) it was stated that the Steering Committee will be constituted by 2 representative SMEs and 1 Professional Association, while the text referred to 3 SMEs. Since MAREMAR is no longer an SME and, more importantly, is not a member of the consortium, the text of the DOW will be corrected to agree with the Chart.

These amendments have been discussed with the Scientific Office of DIVERSIFY in DG RTD (Dr Marta Iglesias, email of 10 Feb 2014)), who has already approved them, so they will be incorporated in the new DOW. Amendments will also include modifications in deliverable times of D2.1 SNP library and chip to genetically characterize meagre or to use in marker assisted breeding programs (M18) and D24.1 The effect of vitamin D inclusions in diets in the development of Systemic Granulomatosis in meagre (M20).

The morning session of DAY 1 concluded with a presentation of WP31 Dissemination, by the Lead Beneficiary Dr. Rocio Robles of CTAQUA (Fig. 6). Dr. Robles presented the dissemination strategy and objective of DIVERSIFY, which included dissemination of knowledge to the scientific community, promotion of implementation of the developed husbandry methods, enhance awareness of the actions of DIVERSIFY by the public and the food sector, and promote investment to the industry through the release of feasibility studies produced in the Socioeconomics WPs. There was also a brief presentation of the multitude of dissemination activities planned throughout the 5 years of the project, including annual presentations by the PC to the EAS meeting, presentations of the SLs during Years 2 and 4 to the EAS meetings, and species-specific Knowledge-transfer workshops during the last year of DIVERSIFY.



Figure 6. Table of Contents of the presentation of WP31 Dissemination by Dr Rocio Robles of CTAQUA.



DAY 1 – Afternoon

In the afternoon of DAY 1, each GWP leader gave a 15-20 min summary presentation of the work to be implemented throughout the 5 years of DIVERSIFY, under each Research Area, which includes Reproduction & Genetics (Neil Duncan, IRTA), Nutrition (Lidia Robaina substituting Marisol Izquierdo, FCPCT), Larval Husbandry (Bill Koven, IOLR), Grow out Husbandry (Nikos Papandroulakis, HCMR), Fish Health (Chris Secombes, UNIABDN) and Socioeconomics (Gemma Tacke, DLO/LEI). The presentations were an excellent opportunity for beneficiaries to become better aware of the whole of activities planned in the DIVERSIFY, since many beneficiaries are involved only in some (or even only one) of the selected fish species, and/or in some of the Research Areas of DIVERSIFY.

After these presentations, the WP31 Dissemination Lead Beneficiary presented some of the new beneficiaries that joined the consortium during the negotiations face, which includes professional associations such as P33. FGM (Greece), P34. BFVi (Germany), P35. MASZ (Hungary), P36. ANFACO (Spain) and the consumer NGO P37. EUFIC (Belgium).

The presentations were uploaded in the web site of the project, in the area of “Meetings-2014 kickoff meeting”

DAY 2 – Workshop Sessions

During the second day of the meeting, six (6) Workshop Sessions running in parallel (2 sessions at a time) were organized according to Research Areas (GWP) with the objective of planning the work to be implemented in the various scientific WPs during the first year of the project, and addressing issues of harmonization of protocols, exchange of visits and samples among beneficiaries (Fig. 5). The minutes prepared by each GWP leader are presented separately.



Figure 5. Attendance of the Workshop Sessions running in parallel ranged between 18 -28 scientists, depending on the Research Area.



An attempt was made to plan the sessions in a way that would minimize the potential time conflict for most Beneficiaries. This was also achieved by the participation to the kickoff meeting of more than one scientist from some of the beneficiaries that are involved in many GWPs. Each GWP leader was responsible for producing the minutes of the session, which were circulated among the participants for approval, before being submitted to the PC for compilation of the kick off minutes, which will be sent to the Beneficiaries for approval.

The DAY 2 meeting was concluded with a brief assembly of all participants, in order to hear a brief report of each GWP leader on the major outcomes of the six sessions, in a way of keeping all aware of the actions of the consortium. The participants were also informed that the presentations from DAY 1 were already uploaded on the projects web site (INTRANET) and were available for their review.

Deviations: The kickoff meeting took place in the second month of the project (January 2014) instead of the proposed 1st month, due to the fact that the starting date came “surprisingly” early after the submission of the GA and the fact that it was December, the last month of the fiscal year and the Christmas holidays. Since the original expectation during the proposal and negotiations phase was that DIVERSIFY would start in January 2014, this 1 month “delay” does not affect the original planning for the implementation of the research activities of the project.



Figure 6. A group photo of the participants was taken at the conclusion of DAY 2. Unfortunately, some participants had to take a flight back to their countries, so the group is smaller than on DAY 1.



Minutes of GWP Reproduction and Genetics workshop session

Kick-off meeting DIVERSIFY, Day 2 (30/01/2014, 11:30-13:15)

By Neil Duncan, IRTA (GWP Leader)

General introduction presentation Neil Duncan (ND), GWP leader

WP Coordinators: The following people will coordinate the implementation and development of each WP. Including seeing that deliverables are met and relevant documentation is passed to the GWP coordinator (ND). The GWP Coordinator will oversee that all advances as planned. He will review and edit deliverables and pass them to the coordinator Constantinos C Mylonas (CM).

WP2: Repro Genetics – meagre: Neil Duncan (ND)

WP3: Repro Genetics – greater amberjack: Aldo Corriero (AC)

WP4: Repro Genetics – pikeperch: Costas Tsigenopoulos (CT)

WP5: Repro Genetics – Atlantic halibut: Birgitta Norberg (BN)

WP6: Repro Genetics – wreckfish: Tito Peleteiro (JP)

WP7: Repro Genetics – mullet: Hanna Rosenfeld (HR)

Egg quality evaluations: Egg quality evaluation for meager, amberjack, wreckfish and mullet will be made with 96-well microtiter plates (mct). The mct technique does not work well with halibut and BN will use a photographic method for all evaluations of egg quality for halibut. **CM will make a plate protocol for egg evaluation using the mct method and will pass to all the group.**

Other analysis: Essentially all other analysis have people responsible indicated in the DOW and often with one group making the majority of the analysis. It was confirmed that IOLR will make LH/FSH analysis on wreckfish and CMRM / ULL nutritional analysis on wreckfish.

Egg transport: To be coordinated and planned as discussed in larval group (see minutes GWP Larval husbandry), essentially test transports will be conducted. Particularly important for mullet IOLR to IRTA and possibly amberjack dependent on Mediterranean spawning possible Canaries to HCMR transport needed.

WP2: meager (ND)

Task 2.5 SNP library and characterization of fast and slow growing meager. Deliverables D2.1 (M05), D2.4 (M30), D2.5 (M30) milestone MS16 (M18). There exist two approaches to this work and neither fits very well with the deliverable date of D2.1 in month 5. **A request will be made to reprogram deliverable date to month 15 the earliest** (theoretically before MS16 at month 18). The work will begin with fast and slow growers from 4 families with 8 known parents (WP20, task 20.1) anticipated to be completed by month 11 at the latest. This work will in the first analysis give both the SNP library and identify SNPs associated with the growth (i.e. deliverables D2.1, D2.4 and MS16). The second two step approach similar to that described in the DOW can be used as a backup plan.

Task 2.1 Genetic characterisation of meagre broodstocks. Deliverables D2.2 (M12). To be completed as in the DOW. Juan Manuel Afonso (JA) indicated that more broodstocks can be analysed and is interested to analyse as many as can be collected. All broodstock fin clip collection should be completed and delivered ASAP to JA and **dates should be fixed now to determine any problem with deliverables.**

Task 2.2 Protocol for paired tank spawning of meagre. Deliverables D2.3 (M21). To be completed as in the DOW. Expected to be completed in 2014, month 12.

Tasks 2.3 and 2.4 Strip spawning protocol and sperm quality. Deliverables D2.6 (M36), D2.7 (M36). To be completed as in the DOW in years 2015 and 2016. Christian Fauvel (CF) and ND will make preliminary work this year if possible.



WP3: greater amberjack (AC)

Task 3.1 Description of the reproductive cycle of greater amberjack. Deliverables D3.1 (M12), D3.2 (M18), D3.3 (M24), D3.4 (M32), D3.5 (M46), D3.6 (M46). To be completed as in the DOW. In Y1 2014 and Y2 2015. Wild fish to be caught for sampling in Y1, March-April (previtellogenesis); May (vitellogenesis); June-July (spawning). Wild-caught fish have been purchased and will be transferred to ITTICAL in February 2014. These fish will be adapted to captivity for one year and sampled in Y2 (March-April, May and June-July), for comparative analyses with wild ones. IFREMER scientist CF will go to ITTICAL in 2015 to participate to sperm collection / analysis. **Sampling protocols must be clearly determined between groups receiving samples and groups taking samples and written protocols need to be defined.** Where possible excess of sample will be taken to maintained duplicate samples. Different strategies were suggested to ensure successful transport of samples, (1) Groups receiving samples could attend final sample point and personally transport all samples back. The project meeting Y2 Oct2014 could be held in Bari, Italy to facilitate collection and transport of samples.

Task 3.2 Development of an optimized spawning induction protocol for captive greater amberjack in the Mediterranean. Deliverables D3.9 (M54). To be completed as in the DOW. Work to be completed in rearing sites: ITTICAL (tank); HCMR (tank and cage), ARGO (cage). Broodstock have been obtained in HCMR and ARGO. Wild-caught broodstock have been purchased and will be transferred to ITTICAL in February 2014. In Y1 (2014) broodstock maturation will be monitored and spawning induced if appropriate, to obtain eggs for WP 15. In HCMR: Y1 compare GnRHa injection vs implants, Y2 (2015) compared 2 doses of the most effective administration method. ARGO: Y1 egg production in cages (possibly without induction). ITTICAL: Y1 egg production in tanks (with induction) and in Y2 main experimental work will be undertaken. HCMR scientist (CM) will provide GnRHa implants and visit to ARGO and ITTICAL for spawning induction to ensure eggs for WP15.

Task 3.3 Development of an optimized spawning induction protocol for captive greater amberjack in the eastern Atlantic. Deliverables D3.7 (M48). To be completed as in the DOW. Rearing site: FCPCT The exact timing of the experiments needs to be determined, **CM will contact with Hipolito Fernandez-Palacios (HF) to determine when work will be completed and when CM will visit FCPCT.**

Task 3.4 Development of an optimized spawning induction protocols for F1 greater amberjack in the eastern Atlantic. Deliverables D3.8 (M54). To be completed as in the DOW. Rearing site: IEO-Canarias. In Y1 2014 preliminary work completed to define experiments and obtain eggs for other WPs. In Y2 2015 main experimental work will be undertaken.

Task 3.5 Spawning induction of greater amberjack and egg collection in cages. Deliverables D3.10 (M54). To be completed as in the DOW. Rearing site: ARGO. Broodstock have been obtained. Y1 egg production in cages (possibly without induction).

WP4: pikeperch (CT)

Task 4.1 Evaluation of the genetic variation in available domesticated broodstocks of pikeperch. Deliverables D4.1 (M12). To be completed as in the DOW. To complete the work on time UL needs to obtain and send the broodstock fin samples as soon as possible; any delay will only delay the work. CT indicated the latest date could be month 9 (August 2014). UL needs to obtain broodstock fin clips from 8 or more different hatcheries. **UL should communicate expected delivery dates of fin clips to determine if dates will delay deliverable.**

Task 4.2 Evaluation of the genetic variation in non-domesticated broodstocks of pikeperch (led by HCMR). Deliverables D4.2 (M16), Milestone MS 17 (M12). To be completed as in the DOW. Again UL needs to obtain and send the wild pikeperch fin samples as soon as possible. **UL should communicate expected delivery dates of fin clips to determine if dates will delay deliverable.**



WP5: Atlantic halibut (BN)

Task 5.1 Documentation of reproductive performance in wild-captured vs cultured (F1/F2) female Atlantic halibut. Deliverable D5.1 (M30). To be completed as in the DOW. Will be completed with stocks in IMR and SWH.

Task 5.2 GnRH implant therapy as a means to improve spawning performance. Deliverables D5.2 (M30). To be completed as in the DOW. In Y1 (2014) preliminary inductions will be made to help design the full experiment for Y2 (2015). The broodstock have been established and weigh 10-15kg.

Task 5.3 Fecundity regulation. Deliverables D5.3 (M36). To be completed as in the DOW.

WP6: wreckfish (JP)

Task 6.1 Collect wild fish to establish new broodstocks. Deliverable D6.4 (M36). To be completed as in the DOW.

Task 6.2 Describe reproductive cycle. Deliverable D6.5 (M 48). To be completed as in the DOW. Blood sampling to coincide with assessment of maturity to associate steroid and gonadotropin levels with gonadal development. To set up gonadotropin assay IOLR will need blood samples and pituitary from the same fish.

Task 6.3 Development of spawning induction procedures. Deliverables, D6.3 (M36), D6.6 (M48), D6.7 (M54). To be completed as in the DOW. Stocks are in good conditions and work will start in the next two months. Program visit of researchers IRTA (ND) and HCMR (CM) to participate in GnRH α induced spawning.

Task 6.4 Evaluation of sperm characteristics and cryopreservation protocols. Deliverables D6.1 (M 24), D6.2 (M 24). To be completed as in the DOW. CF to visit stocks (IEO, CMRM, MC2) during the next two months, Feb-Mar 2014. GnRH α probably not necessary to obtain sperm samples as stocks produced large amounts of sperm in 2013.

WP7: mullet (HR)

Task 7.1 Synchronization of gonadal development. Deliverables D7.1 (M12), D7.2 (M18), D7.2 (M24). To be completed as in the DOW. Stocks will be established and work started in Y1 (2014). Short term scientific mission to Palavas (IFREMER) could be organised in the frame AQUAGAMETE COST PROJECT to prepare sperm quality later work in IOLR facilities (immediate action HR: write and submit application for one of her colleagues before Feb 20th).

Task 7.2 Spawning induction. Deliverable D7.3 (M24). To be completed as in the DOW. Stocks will be established (IOLR and DOR) and work started in Y1 (2014).

Task 7.3 Optimization and scale-up of a breeding protocol. Deliverable D7.7 (M). To be completed as in the DOW. Work to begin in Y2. IRTA plans to work with wild adults recently caught and held in captivity.

Task 7.4 Assessment of first sexual maturity. Deliverable D7.5 (48M). To be completed as in the DOW. Work to begin in Y1 with on-growing of juveniles.

Task 7.5 Eggs shipping protocol. Deliverable D7.4 (24M). See above and GWP Larval husbandry, essentially test transports will be conducted.



Minutes of GWP Nutrition

Kick-off meeting DIVERSIFY, Day 2 (30/01/2014)

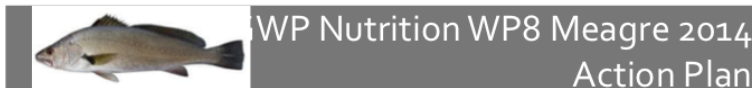
By Lidia Robaina, in place of Marisol Izquierdo (GWP Leader)

Participants:

Alicia Estevez (alicia.estevez@irta.cat), Rafael Guirao (rafa_guirao@hotmail.com), Kristin Hamre (kha@nifes.no), Torstein Harboe (Torstein@imr.no), Salvador Jerez (salvador.jerez@ca.ieo.es), Kevin Debes (asialor.kevindebbs@yahoo.fr), Bill Koven (bmkoven@gmail.com), Fátima Linares (flinares@cimacoron.org), Ivar Lund (il@aquadtu.dk), Robert Mandiki (robert.mandiki@unamur.be), Nikos Papaioannou (papaioannou@irida-sa.gr), Jose Antonio Pérez (janperez@ull.es), Rocío Robles (r.robles@ctaqua.es), Nikos Papandroulakis (npap@hcmr.gr), Lidia Robaina (lrobaina@dbio.ulpgc.es).

A general overview of all WPs was presented and the specific planning for the year 2014 was reported for the responsible of the different species or task.

WP8 Leader FCPCT



- Task 8.1 Improvement of larval weaning feeds (led by FCPCT).

3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	

- Task 8.2 Determination of nutritional requirements to promote feed utilization, consistent growth rates and fish welfare (Led by FCPCT).

3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	

Work planned was presented by FCPCT without deviations from the DOW. No special comments or questions were done.

WP9 Leader FCPCT



- Task 9.1 Improve larval enrichment products to enhance production of larvae and juveniles (led by FCPCT).

3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	

- Task 9.2 Development of diets for grow-out of amberjack to maximize growth (led by HCMR).

3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	

- Task 9.3 Design adequate feeding regimes for broodstock to optimize reproduction (led by IEO).

3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	

Task 9.1. Combined effect of PUFA rich lipids and carotenoids: survival, growth and welfare. The larval stage to be tested was discussed and the use of rotifer was recommended.

Question: what kind of stress? The stress test to be conducted was discussed and agreed to use an air exposure.

Task 9.2. Grow-out: Yannis Kotzamannis (HCMR)

Test 6 level of lysine, low FM (approx. 10%), supplementation of lys (up to 3%).



Question: why only LYS? All aminoacids will be considered, but particular attention to LYS since it is main limiting aminoacid when vegetable sources are used. Kristin Hemre (NIFES) recalled that it is important to focus also in other nutrients different than aminoacids. Diet formulation will be defined by all the partners involved in juveniles nutrition on this species (HCMR, FCPCT, SARC, CANEXMAR). SARC will prepare the diets; for 50 g BW; 4-5 grams. Diet formulation will be discussed during February-March 2014.

Question: is the objective to find the best diet? Why to limit the FM inclusion? It is just first approach to check what is needed. DIVERSIFY will only produce some information about the nutrient requirements, but budget limitations prevent developing the best diet.

Nikos Papandroulakis (HCMR), says that there will be a synergy with other national funded project (KRIPIS, Greece), which will allows getting more information for a second trial at the end of second year. CANEXMAR will do a production trial (M18 to M57).

Nikos Papandroulakis (HCMR): it is important to know how many larvae will be needed for all the experiments; important to create an EXCEL file with the needs for every experiment concerning fish and feeds. This needs coordination and organization.

Bill Koven (IOLR): it would be needed to have a protocol for shipment of juveniles. IRTA will make available for all the partners a protocol for fish transport.

Transport simulation experiments would be interesting. Although there is some experience on fish transport with this spp there is not a lot information.

Nikos Papandroulakis (HCMR) will prepare EXCEL sheet for all the experiment fish needs.

Lidia Robain (FCPCT)will prepare an excel file for all the experiment feed needs.

Task 9.3. Feeding regimes for broodstock were discussed in general (IEO)

9.3.1 Development of spawning protocols were also discussed

9.3.2 Test experimental diets EFA and carotenoids to increase reproduction performance. Feeds will not be made by SARC, since they are not included in the DOW.

WP10 Leader DTU



GWP Nutrition WP10 Pikeperch 2014 Action Plan

Address cannibalism in early stages, quality of fry and survival rate, high stress sensitivity.

- Task 10.1 Effect of selected dietary nutrients on pikeperch larval development and performance (led by DTU).

3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	

Objective: Define optimal nutritional requirements for this species, which are not known. General nutrition objectives: different nutrients, lipids, fatty acids, amino acids, etc

- Task 10.2 Effects of pikeperch early fatty acid nutrition on long-term stress sensitivity (led by DTU).

3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	

Task 10.1 Initial: March- august 2014; objective: formulate and testing enrichment emulsions (and weaning diets) with various levels (high or low) of Ca/P, vit. A, D, and C, EFA multifactor tests.

A meeting is planned on 28 February 2014 for more details. According to the DOW, FCPCT will study skeleton morphogenesis and mineralization.

Task 10.2 early FA nutrition: they have checked the reaction for the larvae towards a predator and escape reaction (escaping tray) depending on the DHA level of the diet they are fed. They had quite high individual variation.



Question: will you analyze the DHA level in the brain? According to previous studies brain is not markedly affected in pikeperch.

WP11 Leader NIFES



- Task 11.1 Early Weaning of Atlantic halibut (led by IMR).

3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	

- Task 11.2 Development of a production strategy for on-grown Artemia (led by IMR).

3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	

- Task 11.4 Comparison of nutrient retention in Atlantic halibut larvae reared in RAS vs FTS (led by NIFES).

3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	

Task 11.1 Nutrition focused on larval rearing.

The problem of Atlantic halibut is that they do not accept dry fed. Marine Harvest got it at day 20, so it is possible. They will make similar feed to a Artemia cysts.

Task 11.2. A protocol of 4 days enrichment for the Artemia will be used, thus not using Artemia as a capsule (biochemical fatty acid transformation in the Artemia are expected). Start feeding at 12 mm; they need to improve the nutritional value of Artemia so it can become a proper nutrition for the larvae.

Exchange of protocol IRTA (Artemia till day 3) and IMR for on growing Artemia to day 4.

Questions: How do you evaluate Artemia as nutrient? As a whole or also taking into account the gut content of the Artemia? Artemia grown on FM are very high in DHA, so the tissue can be very nutritive; filling the gut using Artemia as vector is not so useful.

Why not analyze peptide fractions? Good question ... more difficult to analyze but interesting.

Task 11.4. Nutrient retention reared in EAS and FT, checked in microbiology.

Question: The Group of ULL ask for the expected size of the fish to be received for the assays of digestive ontogeny enzymes. The response was about 70 days; 0.25g ABW; response was agreed for the necessary assays.

WP12 Leader CMRM



- Task 12.1 Live preys and enrichments for wreckfish larvae (led by CMRM).

3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	

- Task 12.2 Influence of broodstock feeding regimes for fecundity and spawn quality (led by IEO).

3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	

There is a lack of information about the species and its culture. Two main objectives: 1) importance of live prey and enrichments; 2) feeding regimes (fresh or compound feeds) influence in broodstock spawning.

Enrichments will be formulated and prepared jointly with the FCPCT group.

Questions: How are you going to assay sperm quality? Through mobility & viability.

What species are you thinking about for the fresh feed? A mix of fish species plus squid meal, & fish oil. Dry feeds will be



mimicking the composition of the fresh feeds. The Group already have some experience in feeding broodstock with fresh semi-moist prepared diets.

Fast grower spp.: 3 kg/per year; 6 kg in 400 days... up to 50 €/kg...

Nikos Papandroulakis (HCMR): they have analyzed stomach content from wild animals and exchange of information is forseen.

WP13 Leader IOLR



At IOLR, they have at the moment 2 spawning seasons per year.

➤ Task 13.1 Improvement of larval performance (led by IOLR).

3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60

Task 13.1. Effects of DHA/EPA/ARA ratios and taurine, in larvae and juvenile performance during rotifers and Artemia feeding.

It seems that taurine helps to eliminate urinary crystals (which seem to be a problem for some larvae spp.). The IOLR group is trying to analyse urinary crystal in fish at the end of the trials.

➤ Task 13.2 Determining mullet nutritional needs for improved weaning to a dry diet (led by IOLR).

3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60

3*3 factorial design (DHA/EPA/Tau)

Experiment with IRIDA to be done ahead of time, diets will have no FM but supplemented with Tau.

IOLR has now 10.000 fish of 1-2 g ABW.

IOLR suggest to move one year back from year 3 to Year 1, the task 13.1 by next summer.

Question: Expected interactions between DHA and taurine? To be studied.

Kotzamanis (HCMR) uses Tau up to 2% inclusion in European seabass with good results in meat quality and growth.

Question: About taurine importante in omnivorous fish? Yes taurine has important physiological implications. FM used in the diets? 0%FM; discussion about better levels in other fish species.

CONCLUSSIONS:

All groups have presented their respective planning for the present year with all planned work within the DOW Schedule.

Interesting discussions took place after each presentation, which was kindly explained by the groups. The main general discussion was related to the feeds in order to cover the different species trials needs.

In order to have a compilation and better understanding of all feeding trials it was agreed that the leader of the Nutrition GWP (Marisol Izquierdo, FCPCT) will create an EXCEL file for the year 2014 with trials to be run by species (See next page). This file will be sent to all groups for filling their feed needs (type, size and quantity).

Table of fish feeds needed for the Task planned for 2014.



NUTRITION GWP
FEEDS BY SPECIES IN 2014

SPECIES	WP	TASK	LEADER	START MONTH	FISH SIZE	FEED TYPE	SIZE (mm)	WHEN	SUPPLIER
MEAGRE	8	8.1	FCPCT	9	larvae	enrichment	-		FCPCT
		8.2	FCPCT	12	larvae	enrichment	-		FCPCT
AMBERJACK	9	9.1	FCPCT	6	larvae	enrichment	-		FCPCT
		9.2	HCMR	18	ongrowing	dry diets			SKRETTING
		9.3	IEO	3	broodstock	dry diets			IEO
PIKEPERCH	10	10.1	DTU	6	larvae	enrichment	-		DTU
		10.2	DTU	12	larvae	enrichment	-		DTU
HALIBUT	11	11.1	IMR	3	larvae	Artemia	-		IMR
		11.2	IMR	3	larvae	Artemia	-		IMR
		11.4	IMR	3	larvae	Artemia	-		IMR
WRECKFISH	12	12.1	CMRM	15	larvae	enrichment	-		FCPCT
		12.2	IEO	12	broodstock	fresh & dry diets			IEO
MULLET	13	13.1	IOLR	3	larvae	enrichment	-		IOLR
		13.2	IOLR	21	larvae	enrichment	-		IOLR



Minutes of GWP Larval Husbandry

Kick-off meeting DIVERSIFY, Day 2 (30/01/2014, 09:00 -11:00)

By Bill Koven IOLR (GWP Leader)

Participants: Bill Koven, Alicia Estevez, Alain Pasquet, Fabrice Teletchea, Birgitta Norberg, Tito Peleteiro, Torstein Harboe, Lydia Robaina, Nikos Papandroulakis.

Each of the WP leaders or their representatives gave approximately a 10 minute summary of experimental plans for the first year of the project (Dec 2013-Dec 2014) where problems of scheduling and sample exchange were discussed.

Meagre (IRTA)

Tasks planned for year 1:

14.1 Determine the earliest and most cost effective weaning period.

Discussion:

1. Conditions for early weaning that include use of Artemia and different days for weaning (10, 12, 15 days) or wean directly without Artemia.

Amberjack (FCPCT)

Tasks planned for year 1:

15.1- Effect of feeding regimes and probiotics.

15.2 Comparison of semi-intensive rearing approaches.

15.3 Effect of environmental parameters during larval rearing.

Discussion:

1. Explored issues of egg transfers and different shipping routes and the use of data loggers

Pikeperch (UL)

Tasks planned for year 1:

16.1 Optimal combination of factors to improve larval rearing.

16.2 Development of industrial protocol.

Discussion:

1. Brief discussion on multifactorial design.

Halibut (IMR)

Tasks planned for year 1:

17.1 Recirculation (RAS) vs flow through (FT) systems during yolk sac and first feeding stages and the effects of larval survival, quality and growth. Use of probiotics in early larval development.

17.3 Production of on-grown *Artemia*.

Discussion:

1. Problems of extended yolk-sac period.

Wreckfish (IEO)

Tasks planned for year 1:

18.1 Development of feeding methodology (lead by HCMR)

18.2 Defining optimum conditions for larval rearing (temperature, RAS vs FTS).

Discussion:

1. Transfer of eggs between HCMR and IEO. Use lessons learned from EU project SelfDott that developed protocols to send bluefin tuna eggs. Carry out egg transfer simulations and use data loggers.

2. Discussed also testing combination of temperature regimes of 14-17 and 19-22 °C (lower natural temperature during early development and raising the temperature later on).



Mullet (IOLR)

Tasks planned for year 1:

19.1- Effect of algal type and concentration on larval performance (IOLR). The best performing algal protocol from this task will be compared with the use of clay.

19.3 – Determine the effect of co-feeding ciliates and rotifers on digestive tract maturation and enzyme production

Discussion:

1. Digestive tract samples to be sent from IOLR to IRTA for enzyme analysis: freeze dried or frozen samples, which courier to chose. Comparison of Algal paste with selected algal protocol will be postponed until 2015.



Minutes of GWP Grow out husbandry

Kick-off meeting DIVERSIFY, Day 2 (30/01/2014)

By Nikos Papandroulakis, HCMR (GWP Leader)

Participants

Nikos Papandroulakis (npap@hcmr.gr), Bill Koven (bmkoven@gmail.com), Mandiki Robert (robert.mandiki@unamur.be), Neil Duncan (neil.duncan@irta.cat), Rafa Guirao (rafa_guirao@hotmail.com), Shafran Gilad (gilad@doraqua.co.il), Salvador Jerez (salvador.jerez@ca.ieo.es), Alain Pasquet (alain.pasquet@univ-lorraine.fr), Deves Kevin (asialor.kevindebbs@yahoo.fr), Lidia Robaina (lrobaina@dbio.ulpgc.es), Yiannis Diakogeorgakis (diakogeo@forkys.com), Yiannis Papadakis (papad@hcmr.gr), Yiannis Kotzamanis (jkotz@hcmr.gr), Panagiotis Anastasiadis (casper@hcmr.gr).
Not present: AGRO (argofisa@yahoo.gr), GEI (info@eelgeitonas.com), IRIDA (papaioannou@irida-sa.gr), CULMAREX

The discussion was organized according to the GWP structure.

WP20-Meagre

T20.1 IRTA presented the work planned without deviations from the DOW to start in summer 2014 (when juveniles are available)

T20.2 HCMR presented the work planned

T20.2.1 to be performed in the cage farm of HCMR. The start is planned for end February 2014 as stocks are available. No deviations from the DOW

T20.2.2 to be implemented at the cage farm of Argo. Expected to start late Autumn 2014 when stocks will be available. No deviations from DOW

T 20.3 HCMR presented the work planned

T20.3.1 to be implemented in 2014 at HCMR AquaLabs. The conditions were described and discussed between partners. No deviation from DOW.

T20.3.4 to be implemented at CULMAREX. CULMAREX sent apologies for not being able to attend the kick-off meeting. IRTA explained that there is a stock of fish available already at the facility of CULMAREX that would be used for the trial and that would enable the trial to start earlier than anticipated in the DOW. The population however presents low growth performance and may also have a high size variability (this would appear the probable situation, but needs to be assessed). CULMAREX (through IRTA) expressed the opinion that this could be an interesting opportunity for the project to work with a stock that had the issue understood to be the main bottleneck for the industry. The opinion was expressed that such a stock with large size variability will not allow an easy final conclusion.

IRTA will discuss with CULMAREX the possible options for the trial, which will include either to sort and homogenize the population, or to start with a new batch. The response of CULMAREX is pending.

WP21 Greater Amberjack

In general the work planned is as in DOW. A general concern from the partners exists in terms of fry availability.

T 21.1

T21.1.1 The trial will be performed as in DOW depending on fry availability. FORKYS and HCMR will decide on type of cages (diameter) to be used.

T21.1.2 Canexmar will install the submerged cage in 2014 and will report on this. A protocol – procedure will be developed for lifting the cage before the actual stocking next year. (collaboration with FCPCT)

T 21.2

21.2.1 Implementation in 2015



21.2.2 IEO presented the work planned as in DOW. Trial with 200g fish, 30fish pit-tagged per tank, 1 m³ tanks in triplicate. Trials for: continues, 1, 2, 3 times feeding daily.
(12 tanks, 360 individuals)

21.3.1 all trials in 2015 as in DOW

As the demand for fry for implementing WP21.1 is high (several thousands of individuals per cage) It was discussed the possibility that some of the trials of Task 21.1 (21.2.1 at FCPCT and 21.3.1 at FCPCT and HCMR) are implemented in 2014. This is because these trials require a limited number of individuals (~500 per trial) and will reduce the demand for the years 2015 and 2016.

FCPCT decided that 21.3.1 can be conducted during 2014 with 500 g fish. Therefore 21.3.1 of 5 g and 21.2.1 will be conducted during 2015 or 2016.

WP22 Pike perch.

UNAMUR presented the work planned.

T22.1 Before the actual start of the multifactorial trial described in the DOW, preliminary experiments will be implemented targeted on the definition of lethal dose of *Aeromonas hydrophila* for the challenge test, and standardization of some immune protocols using pikeperch tissues. These preliminary tests will increase the control of the actual multifactorial experiment which consists of two large protocols:

- 1°/ A multifactorial protocol including 8 factors in two modalities will start by early 2015 when the experimental facility will be available at UL partner (Nancy) to identify the most stressful factors which hamper the growth and welfare of pikeperch juveniles,
- 2°/ the most directive stressful factors identified will be re-evaluated for immunocomptence and disease resistance in the confined facilities of the FUNDP partner in Namur.

WP 23 Grey Mullet

IOLR presented the work planned

T23.1 The implementation is based on wild juvenile availability. It is important that the trial is performed in 2014. IRTA will check for juveniles locally. As an alternative CTAqua can also check. **A first discussion between Neil and Rocio was done and IRTA will first check for local wild juveniles and contact Rocio if juveniles are needed from Southern Spain.** The actual diets that will be used should be defined by IRTA.

T 23.2, 3, 4 as in DOW, presented in details by IOLR

It was decided that the implementation should be postponed for Spring 2015 because

- Wild juveniles for Greece, Spain are not available. Collect wild fry in January
- The composition of the new diet will be prepared during Summer 2014 (IOLR)
- Feed will be prepared during Winter 2014



Minutes of GWP Fish Health

Kick-off meeting DIVERSIFY, Day 2 (30/01/2014)

By Chris Secombes UNIABDN (GWP Leader)

Present: Chris Secombes (CJS), Pantelis Katharios (PK), Daniel Montero (DM), Alicia Estevez, Ana Roque (by Skype), Sonal Patel (SP).

CJS welcomed everyone to the meeting and outlined the agenda for the GWP discussions. Each WP leader (WPs 24-26) would outline the work to be done and the timelines to be met.

PK presented the **WP24 Fish health-meagre** programme on Meagre. There is only one deliverable within the first 12 months (D24.1), and PK asked for this to be moved back to Month 20. This was primarily to allow enough time for the analysis to occur post the feeding trial in task 24.1.1. PK also requested a change from studying the dietary protein levels in granulomatosis, to studying the lipid levels. This was due to the amelioration seen by farmers who changed from a high to low lipid diet, and warrants investigation. DM agreed to discuss with the Nutrition GWP leader and confirm if this was acceptable before considering further.

With two groups working on granulomatosis discussion of agreeing a common scoring system for the pathology took place, and it was agreed the two groups (HCMR and FCPCT) would exchange samples/histology during year 1 to allow a common system to be agreed in advance of the work.

In relation to Task 24.3, there was discussion of which treatments would be used. It was agreed that a tolerance test (on normal fish) in yr 1 would be performed, and this would help define the treatments.

In Task 24.4, it was agreed that HCMR would attempt to characterise isolates from yr 1. Progress would be reviewed at the end of yr 1 ACM, and decide whether an alternative strategy (e.g., use of type strain from *Seriola*) is needed.

For Task 24.5, it was agreed that CJS would confirm the best samples to send to UNIABDN. Once the PhD student was appointed, then it was proposed that Karl Andree (IRTA) visit for training and coordination of the immune work.

In Task 24.7, DM confirmed the plan was to challenge meagre with *Vibrio anguillarum*, *Photobacterium damsela* subsp. *piscicida*, and betanodavirus, but that in year 1 any naturally occurring outbreaks will be examined and characterised. PK commented that HCMR have isolates of *V. anguillarum* and *V. ordali*.

There was a general discussion about the need for planning for yr 2, in terms of tank availability, fish availability and diets. There was also discussion of the preference to start experiments as early as possible in the programme, as a way to buffer against any future calamities.

CJS then led the discussion on the **WP25 Fish health-greater amberjack** programme. There are no deliverables in the first two years, but the planning and coordination was still needed during yr 1. For D25.2 PK commented that it was an error for HCMR to be responsible. CJS and DM agreed they would be responsible for the work to be performed. The work in task 25.2 was discussed, but



would not begin until early 2015. Nevertheless characterisation of baseline mucus defences would precede this. Lastly, in task 25.5, monitoring for naturally occurring disease outbreaks would begin during yr 1.

Finally, SP outlined the plans for **WP26 Fish health-Atlantic halibut**. Good progress was already been made with the eukaryotic expression systems, and all looked to be on line to hit the first deliverable at month 24.



Minutes of GWP Socioeconomics

Kick-off meeting DIVERSIFY, Day 2 (30/01/2014)

By Gemma Tacke DLO/LEI (GWP Leader)

Present: Gemma Tacke (DLO, GWP leader WP 7, chairman and minutes), Emese Bekefi (MASZ), Michel van den Borgh (TU/e), Kriton Grigorakis (HCMR), Lluís Guerrero (IRTA), Matthias Keller (BVF), Thanasis Krystallis (AU), Javier Ojeda (APROMAR), Yannis Pelekanakis (FEM), Carolina Realini (IRTA), Hellas Saltavarea (HRH), Laszlo Varadi (MASZ).

In the GWP 7 Socio Economics meeting all WP-leaders presented the plans for the first year. Enclosed the presentations per WP (27, 28 and 29). Below the comments per WP and per task:

WP 27 Institutional and organisational context

WP 27 has all deliverables in the first year. Gemma Tacke (DLO) presents the tasks to be done in the first year.

27.1.1. Macro-economic analysis with the PESTEL model

DLO realises that the environmental situation is different per country, so this must be done for every country in the DOW

27.1.2. Analysis of certification schemes

DLO realises that the certification schemes are different per country, so this must be done for every country in the DOW

27.2.1 Porter analysis

What datasource is used for the current consumption and the sales environment? Gemma Tacke (DLO) indicates that Gfk, Nielsen or Symphony IRI could be sources. Matthias Keller indicates that Gfk is most reliable for Germany. It could be that other parties in other countries are most reliable, so per country an analysis is made and this is the base for the data source to be used. Hellas Saltavarea (HRH) worked for Nielsen and will assist LEI in selecting the data sources.

27.2.2. Trend mapping

The SME's offer help in reviewing the trends

27.2.3 Survey industrial buyers

This is the largest task in WP 27, since at maximum 10 interviews in every country have to be done. The SME's offer help in selecting the right persons per country.

27.3.1 Comparative cases

Panga could be a case for this task as a successful example of a new product introduction. It is difficult to have a comparative case for wreckfish, since this species is not sold in some of the selected countries.

27.3.2 Canvas

To be presented and discussed at task 30.

WP 28 New product development

Kriton Grigorakis presents the tasks to be done in year 1 in WP 28.1. Originally all tasks start in year 2, but all partners involved in WP 28 think it's better to start already in year 1 with preliminary work by assessing the quality of whole raw fish of the studied species.

28.1.1. Consumer based idea generation for new products

Thanasis Krystallis is responsible for this task. He says that the time to the deliverable at the end of month 14 (end of January 2014) is too short to start this task in December. Originally this deadline was planned at the end of month 24, but as a typing error this came in the proposal as month 14. The project coordinator expects that changing due dates of deliverables is not accepted by the EU, so an earlier start is the only option to fulfil this task in time. In this task 10 group sessions have to be done in 5 countries and analysis of the results.



The only option is to start 29.1.1. earlier, so that this task can start in July 2014 and that the deliverable due at the end of January 2014 can be fulfilled.

Other tasks in 28

To prepare the new product development activities in year 2, in year 1 some quality analysis of the different products (raw whole fish) will take place at HCMR, IRTA and ULL. Kriton Grigorakis will make a working plan with those partners. The GWP will receive a copy as soon as this plan is ready.

WP 29 Consumer behaviour change

Thanasis Krystallis presents 29.1.1. Consumer survey. He explains that the development of the survey and analysis is done by the partners in this project. The fieldwork is coordinated by HRH, as partner of this project.

29.1.1 Consumer survey

Matthias Keller asks how the operationalization of the fieldwork is done? Thanasis Krystallis explains that the questionnaire is written in English and translated to the local language by either project partners in the country or the local partners in the countries. After that the questionnaire is programmed, and send to consumers. Each local partner has a representative database with e-mail addresses of consumers were a representative sample is taken out. This sample of consumers receives the questionnaire to be answered. The SME's would like to see the questionnaire before sending out for review, to check whether the questions give new insights.

The Spanish partner in the project indicates that older people are underrepresented on the internet. How are we going to cover that? HRH gives quota to the local partners to be fulfilled. If older people are underrepresented on the internet, computer added interviewing in this cohort could be necessary.

According to the planning the first deliverable, the dataset, should be ready at the end of month 9 (end of August). Given the revised planning of 28.1.1. this is brought forward to the end of May, so that broad analysis of consumer segments can be done before 28.1.1. starts. The formal due date of Deliverable 29.1 stays at the end of Month 9.

WP 30 Business model development

Michel van den Borgh presents the Canvas Business Model and explains global the features of the model and the practical validity and usability.