

## Strategic Transformation in Agriculture and Rural Space (STARS RAS)

### Croatia Stakeholder Consultations and Priority-setting Results: Agriculture, Aquaculture and Fisheries

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## **Croatia Stakeholder Consultations and Priority-setting Results: Agriculture, Aquaculture and Fisheries**

### **1. Introduction**

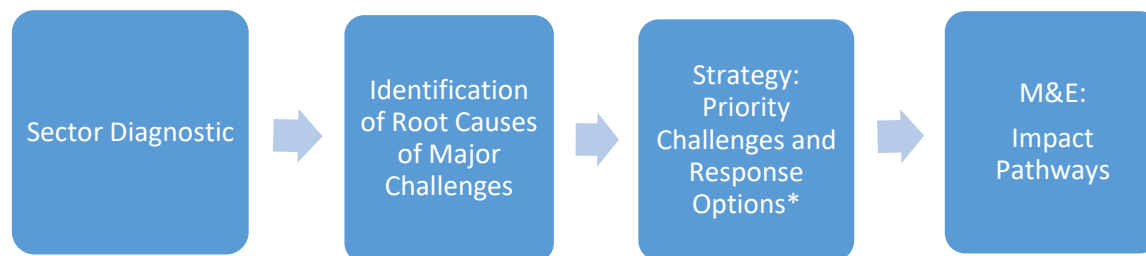
This document reports the results of 1) nation-wide online surveys of stakeholders from Croatia's agricultural, aquaculture and fisheries sectors conducted between March and June, 2019, and 2) priority-setting exercises held as part of stakeholder consultation meetings with representatives from all three sectors between April and July, 2019. The purpose of both the survey and the participant consultations was to gather stakeholder input for the development of a National Agriculture and Rural Development Strategy, which serves as the basis for a new Common Agriculture Policy (CAP) Strategic Plan and Operational Programme for Maritime Affairs and Fisheries under the EU's next budget framework (2021-2027) and aligns with the ongoing development of Croatia's National Development Strategy (NDS).<sup>1</sup> This document is part of a Reimbursable Advisory Services (RAS) engagement by the World Bank with the Ministry of Agriculture through the ongoing Strategic Transformation of Agriculture and Rural Space (STARS) project.

The methodological approach behind the consultation and priority-setting processes is based on that given in a previous STARS document – *Using Priority-setting and Theory of Change Methods for Developing Results-based Food and Bio-economy Strategies in Croatia: Methodological Guidance Note for Stakeholder Consultations* (January, 2019) – and is briefly summarized below. The reader is referred to the original *Guidance Note* for details; some minor adjustments in each of the three cases were made as needed. The stakeholder surveys were developed initially to elicit baseline information on stakeholder priorities to guide the planning of the consultation meetings. However, the Ministry of Agriculture subsequently made the far-sighted decision to make the surveys available to all sector stakeholders nationally. The results from all three surveys are reported below, along with the priority-setting results from the stakeholder consultation meetings.

The overall strategic planning process of which the priority-setting exercises are a part is based on a formal priority-setting approach (elaborated in the *Guidance Note*) which is lodged within a “Theory of Change” (TOC) logic model. This approach – summarized in Figure 1 – begins with a diagnosis and identification of the root causes of key development challenges facing each sector, in this case, Croatian agriculture, aquaculture and fisheries. In our diagnostic analysis of each sector, we have found that each development challenge has multiple root causes or drivers, while similarly, many of the root causes lead to multiple challenges. Thus, for the purposes of our

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**Figure 1. Summary of Theory of Change-driven Priority-setting**



\*Stakeholder consultations a part of this phase.

priority-setting work, we define these critical challenges somewhat broadly. Each of the challenges in turn suggest specific interventions or “response options” – policies, programs, and investments – that address the root causes of the challenges and that also create desired results, including outputs, outcomes, and, ultimately, impacts. Key to the TOC logic model is a careful elaboration of each of these linkages, so that any intervention is linked back to its underlying root cause(s) and forward to expected results.

As noted above, the results reported in this document comprise two steps of a broadly gauged stakeholder consultation process: 1) online surveys of stakeholders, and 2) formal priority-setting processes, which themselves comprised multiple steps. The online surveys served both as a guide to the priority-setting exercises and as a separate instrument to provide stakeholder feedback to the Ministry. Central to the surveys (and the priority-setting exercises) was identification of the main challenges facing each sector, and the drivers underlying those challenges. Short lists of possible response options addressing each challenge were included in both the survey and the stakeholder consultations in order to give survey respondents and participants an idea of what specific interventions might be undertaken to address each of the critical challenges. Full lists of challenges, drivers and possible response options associated with each challenge are contained in the stakeholder surveys in Appendices 1 – 3.

Our proposed approach to the stakeholder consultations is fully described in the *Guidance Note*. Following completion of both the sector diagnostics and the stakeholder surveys, formal multi-criteria priority-setting exercises were conducted at each of the consultations. Overall, these consultations followed six steps:

- 1) *Identify Critical Challenges* that incorporate the situation appraisal (SWOT), stakeholder visions, needs and priorities, and capacities for influencing change (all of which drew from the sector diagnostic studies and stakeholder surveys).
- 2) *Identify and Score Evaluation Criteria* that guide the prioritization of the critical challenges and proposed response options (in Step 4).
- 3) *Identify and Discuss Alternative Response Options* that address the Critical Challenges identified (in Step 1), that tackle the root causes of development challenges outlined in the situation appraisal (SWOT), and that contribute to long-term goals and objectives.

- 4) *Prioritize Critical Challenges and Proposed Response Options* in line with the evaluation criteria established (in Step 2).
- 5) *Articulate Impact Pathways, Assumptions, and Risks* that represent the theory of how prioritized solutions contribute to long-term goals and objectives and what factors may influence future success.
- 6) *Establish National Priorities*, incorporating input from stakeholder consultation outcomes.

In the discussion below, the major findings for each of the three sectors are presented in the tables and are summarized briefly in the accompanying text. The results of the agriculture stakeholder survey and priority-setting consultations are described first in Section 2 and are elaborated in some detail. The results of the aquaculture and fisheries surveys and stakeholder consultations follow in Sections 3 and 4, respectively. The reporting of the aquaculture and fisheries results follows exactly the same format and sequencing as that for the agriculture sector results, so they are elaborated in less detail.

## 2. Agricultural Sector Results

A nation-wide online survey of stakeholders in Croatia's agricultural sector was conducted during March and April, 2019, and priority-setting exercises were held as part of agricultural sector stakeholder consultation meetings held in Zagreb and Osijek on April 3<sup>rd</sup> and 4<sup>th</sup>, 2019. The results of both are reported here in Tables 1 – 9 and are described below.

Our situation appraisal identified 14 major challenges facing Croatian agriculture, as described in our initial sector diagnostic<sup>2</sup> and other sources. These are listed in Table 1. The elaboration of these challenges purposefully followed the overall thrusts of the three main “policy objectives” of the proposed CAP for 2021-2027, to: 1) Foster a smart and resilient agricultural sector ensuring food security; 2) Bolster environmental care and climate action and contribute to the relevant EU objectives; and 3) Strengthen the socio-economic fabric of rural areas. Challenges 1 – 6 in Table 1 relate, in one way or another, to economic and competitiveness problems facing the sector. Challenges 7 – 9 are connected to environmental and climate changes. Challenges 10 – 13 address rural development problems characterizing the sector. Challenge 14 comprises broad policy challenges facing the sector.

These challenges constituted the core of the stakeholder survey, the results of which are reported below in Tables 4 – 6. The survey included both quantitative and qualitative results, as described herein.

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<sup>2</sup> World Bank, *Diagnostic Analysis: Agriculture & Rural Development*, STARS Report to Ministry of Agriculture, Zagreb, May 2019.

**Table 1. Critical Challenges Facing Croatia’s Agricultural Sector**

1. To raise productivity levels in the agri-food sector
2. To improve the business environment for producers and agribusiness SMEs
3. To promote greater innovation in the agri-food sector
4. To increase the production of high-value crops
5. To foster expanded and better integrated markets for Croatian agri-food products
6. To strengthen the links of small producers and agribusiness SMEs (small- and medium-sized enterprises) with domestic and international markets
7. To manage the vulnerability and exposure of the agri-food sector to increasing climate change risks
8. To reduce waste, pollution, and GHG emissions emanating from the agri-food sector
9. To maintain healthy soils and protect Croatian water resources
10. To promote growth and employment in lagging rural areas
11. To promote interest in agri-food sector opportunities among Croatian youth
12. To improve the delivery of technical support and advisory services for agricultural producers and agribusiness SMEs
13. To promote the productive use of private and state-owned agricultural land
14. To strengthen the development impacts of EU and national support programs for agriculture and rural development

The stakeholder consultations followed the survey and consisted of completing Steps 2 – 4 of the six-step process described above. Meeting participants were first asked, in Step 2, to weight the criteria by which the subsequent sets of challenges and response options were to be scored. This was done by assigning points to each of the nine criteria, such that their sums equaled 100. Used as criteria were the nine “Specific Objectives” identified in the proposed CAP reforms for 2021-2027,<sup>3</sup> listed in Table 2. The weights assigned by stakeholders to these criteria (normalized to a base of 1.0) constituted the weights by which the subsequent critical challenges and response options were evaluated.

Following that step, the nine sets of challenges and response options – each set along with the fundamental factors driving those challenges and the respective CAP objectives addressed (selected from the nine identified above) – were presented and discussed in a day-long consultation. The consolidated drivers, challenges, response options, and CAP objectives addressed in each of the nine sets are given in Table 3. At the conclusion of this meeting, participants were asked to score, on a basis of 1 (low) to 10 (high), the respective sets of challenges and response options with respect to each of the criteria. In other words, they were each

<sup>3</sup> Council of the European Union, “Proposal for a Regulation of the European Parliament and of the Council establishing rules on support for strategic plans to be drawn up by Member States under the Common agricultural policy (CAP Strategic Plans)”, Interinstitutional File 2018/0216(COD), 1 March, 2019.

**Table 2. Nine “Specific Objectives” of the Proposed CAP Strategic Plans Used as Criteria in Priority-setting Exercises**

1. Support viable farm income, resilience and food security
2. Enhance and market orientation and competitiveness; more focus on research, technology and digitalization
3. Improve farmers’ position in value chains
4. Contribute to climate change mitigation and adaption, and sustainable energy
5. Foster sustainable development and efficient management of natural resources: water, soil, air, etc.
6. Protect biodiversity, enhance ecosystem services, preserve habitats and landscapes
7. Attract and sustain young farmers and facilitate rural business development
8. Promote employment, growth, social inclusion, and local development in rural areas, including bioeconomy and sustainable forestry
9. Improve response of EU agriculture to societal demands: safe and nutritious food, sustainable food production, limit food waste, animal welfare

asked to *evaluate the extent to which each challenge and set of associated response options were important to achieving the successful transformation of Croatian agriculture, evaluated according to each criterion*. This was done in a 9x9 matrix format – nine sets of challenges and response options, evaluated against nine criteria; this made for 81 total scores by each participant. The individual responses were then weighted by the criteria assigned by individual participants in Step 2, the results were averaged across all stakeholders, and the resultant final values were normalized to 100. The results of this priority-setting process are reported below (Tables 7 – 8).

Finally, participants in the consultations were asked to identify the “top 5” of the total of 36 response options that were identified across all of the nine challenges in the consultation. These results are given in Table 9 below.

To sum up, then, four different sets of results were generated for agriculture from the stakeholder survey and consultations as described above:

1. Survey-based identification of critical challenges facing the sector
2. Stakeholders’ weighting of evaluation criteria for priority-setting
3. Outcome of stakeholders’ priority-setting of critical challenges and associated response options
4. Stakeholders’ identification of “top 5” response options

Following the discussion of the results for the agricultural sector, similar results are presented and discussed below for aquaculture and fisheries.

**Table 3. Drivers, Challenges, Response Options and CAP Objectives Used in Stakeholder Consultations**

Drivers	Critical Challenge	Possible Response Options	CAP Objectives Addressed*
<ul style="list-style-type: none"> <li>• High administrative tax burden</li> <li>• Lack of access to credit for MSMEs</li> <li>• Insufficient support for rural businesses and youth entrepreneurs</li> <li>• Inadequate quantity of adequately trained labor</li> </ul>	<p><b>1. <i>Improve access to credit and finance, and improve the business environment in the agri-food sector</i></b></p>	<ul style="list-style-type: none"> <li>• Reduce taxes and streamline tax burden</li> <li>• Facilitate MSME access to customized financial products and services</li> <li>• Provide tax incentives and technical/investment support services to rural businesses &amp; start-ups</li> <li>• Provide high quality education, training, knowledge and information in line with sector needs</li> </ul>	<p>1 – 3, 5, 7 – 9</p>
<ul style="list-style-type: none"> <li>• Fragmented production and weak producer organizations]</li> <li>• Underdeveloped agri-food logistics infrastructure and services</li> <li>• Stringent public and private quality standards: food safety, SPS, traceability, animal welfare, labeling</li> <li>• Changing consumer preferences and market segmentation</li> </ul>	<p><b>2. <i>Connect producers and agri-food businesses to markets</i></b></p>	<ul style="list-style-type: none"> <li>• Promote commercial/agri-food chain partnerships and develop digital (e-commerce) solutions</li> <li>• Create competitive markets for advanced logistics services</li> <li>• Strengthen national food safety and SPS systems</li> <li>• Provide improved market information and support product differentiation: convenience, quality schemes, branding</li> </ul>	<p>1 – 3, 5, 7 – 9</p>
<ul style="list-style-type: none"> <li>• Insufficient capital investment</li> <li>• Inefficient management practices</li> <li>• Production bias toward primary, low-value agriculture</li> <li>• Low technology adoption</li> </ul>	<p><b>3. <i>Raise productivity levels</i></b></p>	<ul style="list-style-type: none"> <li>• Reformulate support and improve targeting, enhance economic environment for capital investment</li> <li>• Provide high quality education, training, knowledge and information; upgrade management skills</li> <li>• Diversify production systems at the farm level, and promote production of value-added products</li> <li>• Promote improved technology adoption (including digital solutions)</li> </ul>	<p>1 – 5, 7 – 9</p>
<ul style="list-style-type: none"> <li>• Low levels of investment in RDI activities, and weak coordination across sectors and government levels</li> <li>• Limited participation of producers, advisors and agribusinesses in RDI projects</li> </ul>	<p><b>4. <i>Transfer knowledge, information and technologies to producers and agri-businesses</i></b></p>	<ul style="list-style-type: none"> <li>• Increase investment in basic and applied research activities on the basis of national innovation strategies</li> <li>• Enable project-based/demand-led innovation partnerships</li> <li>• Develop public and private advisory services</li> </ul>	<p>1 – 5, 7 – 9</p>



<ul style="list-style-type: none"> <li>• Underdeveloped specialist advisory services</li> <li>• Weak flow of knowledge, information, and data between public and private sectors in AKIS</li> </ul>		<ul style="list-style-type: none"> <li>• Create a central knowledge, information and data exchange platform</li> </ul>	
<b>Table 3. Drivers, Challenges, Response Options and CAP Objectives Used in Stakeholder Consultations (cont'd)</b>			
<b>Drivers</b>	<b>Critical Challenge</b>	<b>Possible Response Options</b>	<b>CAP Objectives Addressed</b>
<ul style="list-style-type: none"> <li>• Unsustainable farming practices and their contribution to vulnerability or emissions increases</li> <li>• Low and poorly adapted technology use</li> <li>• Inadequate disaster risk management instruments and climate co-benefits</li> <li>• Insufficient access to climate and impact assessment data and decision support-making tools</li> </ul>	<p><b>5. <i>Manage climate risks and promote low emissions production</i></b></p>	<ul style="list-style-type: none"> <li>• Promote co-benefits, adaptation and low emission/organic/drought- and pest-resistant production</li> <li>• Promote applied research on climate-smart agriculture and improved technology adoption, including precision agriculture</li> <li>• Develop insurance mechanisms tailored to agricultural sector needs</li> <li>• Provide climate services and agroclimatic information tools to producers</li> </ul>	1 – 2, 4 – 6, 8 – 9
<ul style="list-style-type: none"> <li>• Deteriorating water delivery infrastructure and limited access to irrigation</li> <li>• Sub-optimal production systems in agro-ecological zones</li> <li>• Unsustainable farming practices</li> <li>• Dependence of agri-food production on fossil fuels</li> </ul>	<p><b>6. <i>Improve natural resource management</i></b></p>	<ul style="list-style-type: none"> <li>• Improve water delivery infrastructure and expand on-farm irrigation systems</li> <li>• Strengthen land use planning tools and mechanisms across government levels to better align programs</li> <li>• Support transferring knowledge, information and tools to farmers; promote best management practices (conservation/organic/precision agriculture)</li> <li>• Promote integration of energy efficiency and renewable energy uses in value chains, and valorization of co-products to substitute for fossil fuels</li> </ul>	1 – 2, 4 – 6, 8 – 9
<ul style="list-style-type: none"> <li>• Production orientation towards primary, low-value agriculture</li> <li>• Negative perceptions of agri-food sector opportunities and rural “way of life”</li> <li>• Insufficient support systems for rural businesses and youth entrepreneurs</li> <li>• Weak linkages and coordination of public investments across sectors and government levels in rural areas</li> </ul>	<p><b>7. <i>Attract investment, jobs and youth to rural areas</i></b></p>	<ul style="list-style-type: none"> <li>• Diversify farm production systems; promote production of value-added products; develop broader value chains</li> <li>• Promote new opportunities through high school and training programs, public campaigns, and improved (digital) technology adoption</li> <li>• Provide tax incentives and technical/investment support services to rural businesses and youth start-ups</li> </ul>	1 – 2, 4 – 9

		<ul style="list-style-type: none"><li>• Align public investments in economic infrastructure and strategic value chains (agritourism, ICT, bioeconomy) in rural areas</li></ul>	
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<b>Table 3. Drivers, Challenges, Response Options and CAP Objectives Used in Stakeholder Consultations (cont'd)</b>			
<b>Drivers</b>	<b>Critical Challenge</b>	<b>Possible Response Options</b>	<b>CAP Objectives Addressed</b>
<ul style="list-style-type: none"> <li>• Inadequate targeting and lack of strategic partnership among stakeholders in agriculture</li> <li>• High levels and inequitable distribution of direct income support</li> <li>• Insufficient support for rural development investments and complex procedures for non-IACS “soft” rural measures</li> <li>• Weak impact monitoring and evaluation system, and high level of general services expenditures</li> </ul>	<p><b>8. <i>Enhance the development impacts of public agricultural expenditures under the CAP</i></b></p>	<ul style="list-style-type: none"> <li>• Review development priorities; adjust eligibility criteria in line with sector/producer needs; enhance partnerships</li> <li>• Redistribute and establish a cap on Pillar I subsidies</li> <li>• Focus rural development support on investments and simplify procedures for rural measures supporting cooperation</li> <li>• Conduct systematic public expenditure reviews</li> </ul>	1 – 9
<ul style="list-style-type: none"> <li>• Uncertain land status due to mismatch between land cadaster and land registration</li> <li>• Inefficient and inequitable allocation of state-owned agricultural land</li> <li>• Cropping patterns changing towards non-productive uses</li> <li>• Sub-optimal production systems in agro-ecological zones and lack of regionalization</li> </ul>	<p><b>9. <i>Productively mobilize state-owned and private agricultural land resources</i></b></p>	<ul style="list-style-type: none"> <li>• Integrate and improve the land information system</li> <li>• Increase transparency of land allocation processes for state-owned agricultural land and monitoring</li> <li>• Improve targeting of CAP Pillar I and II expenditures towards higher value addition in land use</li> <li>• Strengthen land use planning tools and mechanisms</li> </ul>	1 – 9

\* See Table 2 for nine CAP objectives.

## **Survey Results**

Results from the online survey of agricultural stakeholders are given in Table 4. These are the final results of the survey which extended through the months of March and April, 2019. By the end of this period, **1,930 individuals had responded to the online survey**. Stakeholders were asked to identify eight (8) of the 14 critical challenges and associated response options that are “the most important for Croatia and where the greatest potential lies for improving Croatian agriculture.” Thus, the sum of responses given in Table 4 is approximately eight times the number of respondents to the survey, after accounting for incomplete responses, etc.

While the indicated priorities of survey respondents are distributed widely among the possible responses, it is clear that two general areas are the most prominent: addressing the challenges presented by the overall business environment in Croatia (1,566 responses), the need to strengthen the linkages of small- and medium-sized enterprises with domestic and international markets (1,444 responses), raising overall productivity levels in the agri-food sector (1,201), and increasing the production of high-value crops (1,151 responses), together emerge as the top general priority. These challenges (and associated response options) are interrelated as they all reflect the consensus responses of stakeholders regarding ***the critical need to enhance the business and economic competitiveness of Croatian agriculture through various measures, including addressing the general business environment, increasing firm and industry productivity and efficiency, further diversifying production and markets, and strengthening market linkages***.

The second general priority of respondents is ***promoting rural economic development***, including promoting rural growth and employment (1,309 responses) and promoting opportunities for youth in the agri-food sector (1,182). Receiving lower numbers of priority responses are those challenges related to technological and market innovation, environment and climate objectives, and national policy objectives – although it should be said that measures addressing these challenges also have clear and direct implications for the two general priorities identified above.

Several additional questions regarding respondent affiliation and demographic information were asked in the survey, the results of which are summarized in Table 5. Respondents were overwhelmingly from the agricultural production (1,753 respondents), food distribution (213), and food processing (162) subsectors. (A large number of respondents listed overlapping affiliations, most commonly across these same three categories). Fewer respondents listed affiliations in research, public administration, agri-food consulting, and government or Local Action Groups (LAGs). Three-quarters (75.1%) of the 1,930 respondents were male, and one-quarter (24.9%) female. In terms of age, nearly half of the respondents (917 respondents, or 47.5%) were aged 40-60 years, with a large number of younger respondents aged 40 years or less (676, or 35.0% of respondents), and a much smaller number of older respondents, aged 60-plus years (337, or

17.5%). This age distribution in part reflects the greater familiarity and acuity of younger respondents with the Internet, as this was an online survey. Lastly, in terms of experience, 1,314

**Table 4. Responses to Stakeholder Survey: Agriculture**

<b>Responses*</b> (top 5 highlighted)	<b>Critical Challenges (and associated Response Options**) for Croatian Agriculture</b>
<b>1201</b>	<b>1. To raise productivity levels in the agri-food sector</b>
<b>1566</b>	<b>2. To improve the business environment for producers and agribusiness SMEs</b>
946	3. To promote greater innovation in the agri-food sector
1151	4. To increase the production of high-value crops
1109	5. To foster expanded and better integrated markets for Croatian agri-food products
<b>1444</b>	<b>6. To strengthen the links of small producers and agribusiness SMEs (small- and medium-sized enterprises) with domestic and international markets</b>
1111	7. To manage the vulnerability and exposure of the agri-food sector to increasing climate change risks
961	8. To reduce waste, pollution, and GHG emissions emanating from the agri-food sector
1111	9. To maintain healthy soils and protect Croatian water resources
<b>1309</b>	<b>10. To promote growth and employment in lagging rural areas</b>
<b>1182</b>	<b>11. To promote interest in agri-food sector opportunities among Croatian youth</b>
777	12. To improve the delivery of technical support and advisory services for agricultural producers and agribusiness SMEs
116	13. To promote the productive use of private and state-owned agricultural land
576	14. To strengthen the development impacts of EU and national support programs for agriculture and rural development

\*Each respondent was asked to identify 8 priority challenges among the 14 listed in the survey.

\*\* Possible response options are given in Table 3.

**Table 5. Summary of Survey Information from Respondents: Agriculture**

<b>Affiliation of Respondents, by activity:*</b>	<b>Number of Responses</b>
Agricultural production	1753
Food processing	162
Food distribution (wholesale, retail, logistics)	213
Association of food manufacturers or retailers	38
University and research institutions	16
Public administration	36
Consultant	44
Governmental organization or Local Action Group (LAG)	33
Other	154
<b>Total</b>	<b>1930*</b>
<b>Gender:</b>	
Male	1449
Female	481
<b>Total</b>	<b>1930</b>
<b>Age:</b>	
< 40 years	676
40-60 years	917
> 60 years	337
<b>Total</b>	<b>1930</b>
<b>Experience:</b>	
< 5 years	321
5-10 years	295
> 10 years	1314
<b>Total</b>	<b>1930</b>

\*There were many multiple responses for “affiliation”

respondents, or more than two-thirds (68.1%) of the total, reported 10 or more years of experience in the agri-food sector, while 321 (16.6%) reported less than 5 years of experience, and 295 respondents (15.3%) reported between 5 and 10 years of experience. Survey respondents clearly reflect a very diverse cross-section of agricultural stakeholders – as was the intent of the survey.

Survey respondents were also asked if they wished to volunteer additional suggestions regarding critical challenges and potential response options for Croatian agriculture, not given in Tables 3 and 4, that present potential opportunities for the sector. These responses numbered in the many hundreds and are not fully reported here. The vast majority of these qualitative responses corresponded to, or were consistent with, the challenges and response options given in Table 3 above. However, many of the suggestions were innovative and represent valuable additions to the policy dialogue. Many of the suggestions were centered on the following general areas:

- Increasing sales of domestic food products, especially for small- and medium-sized producers – identifying new markets, promoting quality-orientation, and connecting Slavonia/Dalmatian hinterland with coastal markets;
- Issues surrounding land ownership and management – ensure efficient allocation of state land to the most capable producers, simplify processes and requirements for leasing of unused land, taxation of abandoned land, modernization of inheritance laws, clarifying property rights and ensuring consistency between cadaster and land registration, etc.;
- Measures to encourage small producers/family farms, young farmers, and MSMEs – tax exemptions/incentives, agricultural and agribusiness management education in high schools, preference in public land allocation and leasing, easing transfer of ownership, etc.;
- Promoting ecological agriculture – as a way of strengthening agriculture, diversifying markets, supporting public health and nutrition, making more efficient use of inputs, etc.;
- Increasing efficiency and effectiveness of government incentives – reduced administrative burden, smarter eligibility/selection criteria, increased controls, and improved transparency regarding the use of funds; and
- Facilitating well-functioning value chains - including support systems and tools promoting greater value addition by producers and fair trade relationships.

There were also many suggestions that involved restricting and controlling imports of agro-chemical inputs as well as food products of unknown origin or quality as a way of protecting and encouraging domestic production.

A representative number of these suggestions are given in Table 6.



**Table 6. Selected Additional Recommendations in Stakeholder Survey: Agriculture**

<b>Critical Challenges</b>	<b>Recommended Solutions/ Response Options</b>
1. Improve access to credit and finance, and improve the business environment in the agri-food sector	<ul style="list-style-type: none"> <li>• Simplify criteria and administrative requirements for loans and financing.</li> <li>• More favorable loan terms for SME's.</li> <li>• Strengthen business management skills of (young) producers and MSMEs.</li> <li>• Provide CAP incentives in advance or allow use as guarantees for raising loans.</li> <li>• Develop mechanisms/platforms facilitating access to market price information, timely payments, as well as sharing of investment costs and equipment.</li> <li>• Stronger controls on fraudulent imports and labeling of food products and agro-chemical inputs.</li> <li>• Simplify regulations restricting building construction adjacent to agricultural lands</li> <li>• Reduce/eliminate VAT on agricultural products, machinery, and raw materials etc.</li> </ul>
2. Connect producers and agri-food businesses to markets	<ul style="list-style-type: none"> <li>• Strengthen producer organizations for joint/cooperative buying and product placement.</li> <li>• Build a strong national “produced in Croatia” brand, emphasizing high-quality foods, and organize international fairs.</li> <li>• Build agri-tourism strategies around distinctive regional agri-food products.</li> <li>• Develop more local product varieties.</li> <li>• More direct contracting between producers &amp; cooperatives with retail chains and coastal hotels.</li> <li>• Integrate local sourcing preferences in public procurement schemes and introduce high-quality, eco-products for state-funded public services (schools, hospitals, military, etc.).</li> <li>• Build agricultural exchange(s) linked to other EU markets and promote online sales along with expedited customs clearing.</li> <li>• Take maximum advantage of “flexibility rules” for small, local producers in complying with EU food safety requirements (Hygiene Package)</li> <li>• Support investments in on-farm storage and small-scale processing facilities (e.g. mini-slaughterhouses).</li> </ul>

<b>Table 6. Additional Recommendations in Stakeholder Survey: Agriculture (cont.)</b>	
<b>Critical Challenges</b>	<b>Recommended Solutions/ Response Options</b>
3. Raise productivity levels	<ul style="list-style-type: none"> <li>• Reduce input costs and create more competition in input markets (seed, agro-chemicals etc.).</li> <li>• Improve organization and provision of private agricultural services, including machinery rental and technical consultant services.</li> <li>• Improve technical support for cooperatives and producer-industry collaborations.</li> </ul>
4. Transfer knowledge, information and technologies to producers and agri-businesses	<ul style="list-style-type: none"> <li>• Greater participation of lead farmers, students, and practitioners in applied research and advisory services.</li> <li>• Enhance practice-based, technical training of advisory services.</li> <li>• Establish digital innovation hubs for food sector</li> <li>• More media and internet-based agricultural education and advisory services (e-counsel) to distribute quality information and improve literacy</li> <li>• Provide practical workshops for producers, especially in the off-season.</li> <li>• Promote positive examples from other countries: Netherlands, Israel, Turkey, etc.</li> </ul>
5. Manage climate risks and promote low emissions production	<ul style="list-style-type: none"> <li>• Provide climate and weather forecasting services</li> <li>• Boost public investments in and simplify permitting procedures for irrigation, including reservoirs and micro-, small-, and medium-sized irrigation systems.</li> <li>• Subsidies for procuring equipment for waste and emissions reduction (e.g. bio-gas).</li> <li>• Incentives for ensuring against natural disasters and buying protective equipment (e.g. against frost/hail).</li> <li>• Better public education of farmers and consumers.</li> </ul>
6. Improve natural resource management	<ul style="list-style-type: none"> <li>• Promote organic, regenerative, permaculture, biodynamic agriculture, while integrating environmentally friendly measures (organic fertilizer, crop rotation, minimum tillage, etc.) in conventional production.</li> <li>• Improved (local) agri-food waste management: systems, organization, technologies.</li> <li>• Free soil testing.</li> <li>• Investment in technologies for soil fertility and fertilization monitoring.</li> <li>• Improved management of river resources, including overflow and drainage networks.</li> </ul>

<b>Table 6. Additional Recommendations in Stakeholder Survey: Agriculture (cont.)</b>	
<b>Critical Challenges</b>	<b>Recommended Solutions/ Response Options</b>
7. Attract investment, jobs and youth to rural areas	<ul style="list-style-type: none"> <li>• Develop agri-food clusters and promote related industries and services.</li> <li>• Provide public scholarships and incentives to private companies to hire young workers, with obligation to work in company afterward.</li> <li>• Better (transport) connectivity between urban centers and rural areas.</li> <li>• Create agricultural entrepreneurial zones, with infrastructure and incentives in line with global best practices.</li> <li>• Better education; promote positive examples from other countries; showcase successful farmers.</li> </ul>
8. Enhance the development impacts of public agricultural expenditures under the CAP	<ul style="list-style-type: none"> <li>• “Regionalize” CAP Strategic Plan with region- and crop-specific targets.</li> <li>• Simplify application forms/processes and access to related information (web- and paper-based) to reduce dependency on private consultants.</li> <li>• Eliminate the requirement to be registered as a full-time farmer in VAT system to benefit from CAP support.</li> <li>• Use CAP funds to better incentivize SME’s and rural development, versus transfers to big producers.</li> <li>• Reduce dependency on direct income support.</li> <li>• Limit the maximum amount of support for investment to a maximum of 50%.</li> <li>• More effective supervision and stricter, on-the-spot controls over the allocation/use of CAP funds.</li> <li>• Publish details of projects benefiting from CAP and/or national support.</li> <li>• Improve feedback mechanisms to rejected applicants.</li> <li>• Pay more attention to anti-dumping measures.</li> </ul>
9. Productively mobilize state-owned and private agricultural land resources	<ul style="list-style-type: none"> <li>• Introduce taxes, penalties and enable cancellation of leases on unused agricultural land.</li> <li>• Raise rental prices of public agricultural land to be at least greater than the direct payments per hectare.</li> <li>• Simplify and modernize inheritance laws to facilitate land transfer and ownership rights.</li> <li>• Fairer taxation of land used exclusively in agriculture.</li> <li>• Eliminate incentives for ecological perennial crops.</li> <li>• Conduct stricter field controls on leased land.</li> </ul>

<b>Critical Challenges</b>	<b>Recommended Solutions/ Response Options</b>
9. Productively mobilize state-owned and private agricultural land resources	(continued) <ul style="list-style-type: none"> <li>• Provide preferential access to publicly owned farmland and incentivize land consolidation, in particular for “real” farmers, young people, and smaller producers (e.g. capping the number of leased hectares per holding (approx. 30-50 ha))</li> <li>• Allocate public land on the basis of distance, not by the domicile of the lessee/buyer.</li> </ul>

### **Stakeholder Consultation Results**

As described above, at the first stakeholder exercises in both Zagreb and Osijek, participants were asked to evaluate (e.g., to weight) the nine Specific Objectives identified in the proposed CAP reforms for 2021-2027 (see Table 2) as criteria by which the subsequent critical challenges and response options would then be evaluated (e.g., scored). The weights assigned to these criteria by stakeholders in each of the consultations and the two groups averaged together are given in Table 7. The top four objectives are highlighted for the combined stakeholder groups. Objective 7, that of “attract[ing] young farmers and rural business development,” was the top-rated of the CAP objectives overall by stakeholders with a weight of 0.16. Following closely in order were Objective 3 (“Improve farmers’ position in value chains”) with a weight of 0.15, Objective 1 (“Support farm income and food security”) with a weight of 0.14, and Objective 2 (“Increase competitiveness; focus on research and development, and technology”) with a weight of 0.13. These results, in general, reinforce the findings of the stakeholder survey in identifying *general business and economic competitiveness and rural development objectives* as primary objectives of stakeholders – although it should be emphasized that, in this case, these were clearly designated not as objectives in and of themselves, but as *criteria* by which the following challenges and response options would be evaluated.

In the final step of the priority-setting exercise, as described above, stakeholders were asked to evaluate (e.g., score) each of the nine (9) sets of challenges and response options in Table 3 by their *importance in achieving the successful transformation of Croatian agriculture*, evaluated according by each criterion. (This prioritization process weights the scores for each response option by the respective weights in Table 7, for each individual participant). The results are given in Table 8.

The results of the stakeholder priority-setting process are more nuanced than the results of the survey and the criteria weighting exercise reported above. When evaluated individually by each of the CAP criteria, the overall priority scores for the nine sets lie in a fairly narrow range

**Table 7. Weighting of Evaluation Criteria (CAP Objectives) by Stakeholders**

Nine (9) CAP Objectives*	Zagreb Consultation (n = 53)	Osijek Consultation (n = 24)	Overall Weights of Evaluation Criteria (n = 77)
<b>1. Support farm income and food security</b>	<b>.14</b>	<b>.14</b>	<b>.14</b>
<b>2. Increase competitiveness; focus on R&amp;D, technology</b>	<b>.13</b>	<b>.13</b>	<b>.13</b>
<b>3. Improve farmers' position in value chains</b>	<b>.14</b>	<b>.16</b>	<b>.15</b>
4. Contribute to climate change adaptation & mitigation, sustainable energy	.08	.11	.09
5. Improve efficiency & sustainability of natural resource management	.10	.10	.10
6. Protect biodiversity, ecosystem services, habitats, landscapes	.07	.07	.07
<b>7. Attract young farmers; promote rural business development</b>	<b>.16</b>	<b>.15</b>	<b>.16</b>
8. Promote broad-based rural economic development	.11	.08	.10
9. Improve agricultural responses to broader societal requirements	.06	.06	.06
<b>Total Weight</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>

\*top 4 highlighted

(64.6 to 79.2 in the overall scoring), which is typical of similar priority-setting exercises.<sup>4</sup> Nonetheless, some clear distinctions emerge. *The highest ranked challenge and associated set of response options is to “transfer knowledge, information and technologies to producers and agribusiness”* (weighted score of 79.2, overall). Although this topic was not among the most highly ranked in the online stakeholder survey (Table 4), *because the generation and transmission of knowledge, information and technology is highly ranked across many multiple evaluation criteria*, it emerges as the highest ranked challenge (and associated response options) overall. Challenge and response options #6 – *“Attract investment, jobs and youth to rural areas”* – *ranks as the second highest priority* (score = 76.1), reinforcing the prioritization of this same objective in the stakeholder survey and among the CAP evaluation criteria. The third highest priority score was assigned by stakeholders to option #9 (“Productively mobilize state-owned and private

<sup>4</sup> It is well-established in scoring approaches to priority-setting that stakeholders -- if they are in general agreement with the available options and regardless of instructions to use the full range of available scores (here, 1 to 10) – are typically reluctant to assign very low values to the options presented.

**Table 8. Average Scores of Critical Challenges and Associated Response Options from Stakeholder Consultations**

<b>Challenges (and Response Options*)</b>	<b>Zagreb Consultation (n = 34)</b>	<b>Osijek Consultation (n = 20)</b>	<b>Overall Scores of Challenges &amp; Response Options (n = 54)</b>
1. Improve access to credit & finance, and improve business environment for agri-food sector	67.3	75.6	70.2
<b>2. Connect producers and agri-food businesses to markets</b>	<b>70.0</b>	<b>75.1</b>	<b>71.8</b>
3. Raise productivity levels	70.9	70.1	70.6
4. Manage climate risks and promote low emissions production	61.7	69.9	64.6
5. Improve natural resource management	66.7	73.0	68.9
<b>6. Attract investment, jobs and youth to rural areas</b>	<b>74.8</b>	<b>78.5</b>	<b>76.1</b>
<b>7. Transfer knowledge, information &amp; technologies to producers and agribusiness</b>	<b>78.3</b>	<b>80.9</b>	<b>79.2</b>
8. Enhance the development impacts of public expenditures under the CAP	70.9	70.3	70.7
<b>9. Productively mobilize state-owned and private agricultural land resources</b>	<b>73.4</b>	<b>71.4</b>	<b>72.7</b>

\*For listing of response options, see Table 3.

agricultural land resources,” score = 72.7). As is clear from the survey and discussions with many agricultural stakeholders, issues surrounding land resources, their ownership and productive use figure prominently among stakeholders across the country. The fourth highest-ranked priority by stakeholders was Challenge #2 (“Connect producers and agri-food businesses to markets,” score = 71.8). Again, this reinforces the findings of the stakeholder survey and the prioritization of CAP objectives above: among the primary mechanisms to strengthen the competitiveness of Croatian agriculture is strengthening the connections between producers and agri-food businesses with markets, including domestic and international markets and those for higher-value products.

Lastly, at the end of the stakeholder consultations, participants were asked to identify their “top 10” of the 36 possible response options (those associated with the nine critical challenges) listed in Table 3 (column 3). These results are reported in Table 9 (the results from both Zagreb and Osijek consultations are combined due their small sample properties). The priority rankings of

**Table 9. Prioritized Response Options Selected by Stakeholder Consultation Participants (\* = top 5 selected)**

<b>Critical Challenge</b>	<b>Possible Response Options</b>	<b>No. Selected</b>
<b>1. Improve access to credit and finance, and improve the business environment in the agri-food sector</b>	• Reduce taxes and streamline tax burden	<b>24*</b>
	• Facilitate MSME access to customized financial products and services	<b>15</b>
	• Provide tax incentives and technical/investment support services to rural businesses & start-ups	<b>22*</b>
	• Provide high quality education, training, knowledge and information in line with sector needs	<b>13</b>
<b>2. Connect producers and agri-food businesses to markets</b>	• Promote commercial/agri-food chain partnerships and develop digital (e-commerce) solutions	<b>20*</b>
	• Create competitive markets for advanced logistics services	<b>11</b>
	• Strengthen national food safety and SPS systems	<b>12</b>
	• Provide improved market information and support product differentiation: convenience, quality schemes, branding	<b>13</b>
<b>3. Raise productivity levels</b>	• Reformulate support and improve targeting, enhance economic environment for capital investment	<b>14</b>
	• Provide high quality education, training, knowledge and information; upgrade management skills	<b>16</b>
	• Diversify production systems at the farm level, and promote production of value-added products	<b>22*</b>
	• Promote improved technology adoption (including digital solutions)	<b>14</b>
<b>4. Transfer knowledge, information and technologies to</b>	• Increase investment in basic and applied research activities on the basis of national innovation strategies	<b>13</b>
	• Enable project-based/demand-led innovation partnerships	<b>13</b>
	• Develop public and private advisory services	<b>13</b>

producers and agri-businesses		
	• Create a central knowledge, information and data exchange platform	<b>19</b>
<b>Table 9. Prioritized Response Options Selected by Stakeholder Consultation Participants (cont'd)</b>		
<b>Critical Challenge</b>	<b>Possible Response Options</b>	<b>No. Selected</b>
<b>5. Manage climate risks and promote low emissions production</b>	• Promote co-benefits, adaptation and low emission/organic/drought- and pest-resistant production	<b>16</b>
	• Promote applied research on climate-smart agriculture and improved technology adoption, including precision agriculture	<b>6</b>
	• Develop insurance mechanisms tailored to agricultural sector needs	<b>15</b>
	• Provide climate services and agroclimatic information tools to producers	<b>11</b>
<b>6. Improve natural resource management</b>	• Improve water delivery infrastructure and expand on-farm irrigation systems	<b>6</b>
	• Strengthen land use planning tools and mechanisms across government levels to better align programs	<b>17</b>
	• Support transferring knowledge, information and tools to farmers; promote best management practices (conservation/organic/precision agriculture)	<b>12</b>
	• Promote integration of energy efficiency and renewable energy uses in value chains, and valorization of co-products to substitute for fossil fuels	<b>6</b>
<b>7. Attract investment, jobs and youth to rural areas</b>	• Diversify farm production systems; promote production of value-added products; develop broader value chains	<b>21*</b>
	• Promote new opportunities through high school and training programs, public campaigns, and improved (digital) technology adoption	<b>11</b>
	• Provide tax incentives and technical/investment support services to rural businesses and youth start-ups	<b>10</b>
	• Align public investments in economic infrastructure and strategic value chains (agritourism, ICT, bioeconomy) in rural areas	<b>10</b>
<b>8. Enhance the development impacts of public agricultural expenditures under the CAP</b>	• Review development priorities; adjust eligibility criteria in line with sector/producer needs; enhance partnerships	<b>12</b>
	• Redistribute and establish a cap on Pillar I subsidies	<b>13</b>
	• Focus rural development support on investments and simplify procedures for rural measures supporting cooperation	<b>14</b>



	• Conduct systematic public expenditure reviews	<b>3</b>
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<b>Table 9. Prioritized Response Options Selected by Stakeholder Consultation Participants (cont'd)</b>		
<b>Critical Challenge</b>	<b>Possible Response Options</b>	<b>No. Selected</b>
<b>9. Productively mobilize state-owned and private agricultural land resources</b>	• Integrate and improve the land information system	<b>14</b>
	• Increase transparency of land allocation processes for state-owned agricultural land and monitoring	<b>14</b>
	• Improve targeting of CAP Pillar I and II expenditures towards higher value addition in land use	<b>14</b>
	• Strengthen land use planning tools and mechanisms	<b>9</b>

Note: Participants were each asked to identify 10 options.

response options are quite dispersed among the many options. However, the five most popular response options among stakeholders all related to improving the business environment facing the agri-food sector and employing business strategies aimed at diversifying farms and agribusinesses. In order, the top five response options were: 1) reduce taxes and streamline the tax burden; 2) provide tax incentives and technical/investment support services to rural businesses and start-ups; 3) diversify production systems at the farm level and promote production of value-added products (in the context of raising productivity levels); 4) diversification through value-added products and broadening value chains (in the context of attracting investment, jobs and youth to rural areas); and 5) promote commercial/agri-food chain partnerships and develop digital (e-commerce) solutions.

## Conclusions

Drawing from the specific results reported above, two general conclusions emerge from the three sources of stakeholder-based priorities – the national online stakeholder survey, the weighting of CAP criteria by participants in the stakeholder consultations, and the priorities expressed by those who participated in the consultations. The first general conclusion is that two major priority areas emerge from these exercises. The first priority area is ***enhancing the business and economic competitiveness of Croatian agriculture***, including specific elements such as building stronger linkages across the sector, increasing sector productivity, strengthening value chains, especially for high-value products, and more effectively connecting producers and agri-food businesses to markets, including both domestic and international markets. The second priority area is ***strengthening rural economic development***, including promoting rural business development by such measures as attracting investment, jobs and youth to rural areas, supporting rural growth and employment, and notably, promoting opportunities for youth in the agri-food sector. The broad prioritization of these two general areas emerges as a strong consensus from the different stakeholder-based exercises.

There is also a second and more nuanced conclusion. The priority-setting approach followed in the stakeholder consultations uses an indirect methodology – through the weighting of evaluation criteria – to “reveal” the underlying priority areas expressed by stakeholders. In this regard, the results summarized in Table 8 imply at least two other priority (results) areas identified by stakeholders. Indeed, the *top-rated* of the nine sets of priority challenges and response options by stakeholders was neither of those above; rather, it was the ***transfer [of] knowledge, information and technologies to producers and agribusiness***. In other words, the top-rated challenge was a *specific action step* designed to address *several* of the underlying challenges facing Croatian agriculture: strengthening competitiveness, enhancing rural development opportunities, adapting to climate change, promoting better environmental management, etc. Similarly, the third-ranked priority revealed through the stakeholder prioritization exercises was ***productively mobiliz[ing] state-owned and private agricultural land resources***. Land ownership and management issues

pervade discussions of Croatian agriculture across many dimensions. Thus, it is not surprising that this also emerged as a top priority among stakeholders since, like information and technology transfer, improving land management crosscuts and touches on many of the different challenges facing the agricultural sector.

Finally, the five top-rated response options (the interventions in Table 9) reveal the important role assigned by stakeholders to *strengthening the broader enabling environment and reducing the costs of doing business* for producers and agribusinesses. In addition, they reveal a stakeholder preference for *increased on- and off-farm diversification* – including developing value-added products and markets, agri-food chain partnerships, and new value chains (e.g., agri-tourism, bioeconomy) – as key strategies for increasing sector productivity and growth.

### 3. Aquaculture Sector Results

An online nation-wide survey of stakeholders in Croatia’s aquaculture sector was conducted during May and June, 2019. Aquaculture sector stakeholder meetings, including formal priority-setting exercises by stakeholders, were held in Split and Zagreb on May 27 and 29, 2019. The results of both are reported here in Tables 10 – 18 and in the accompanying text below.

Our diagnostic of the aquaculture sector<sup>5</sup> and related analysis and meetings with stakeholder identified 10 critical challenges facing Croatian aquaculture. These are listed in Table 10. These challenges relate closely to nine main policy objectives drawn from recent documents of the European Maritime and Fisheries Fund (EMFF) and reports for Croatia’s proposed National Development Strategy (NDS). These fall into three different areas – economic growth and development, environment and climate, and coastal and rural development – and are outlined in detail in Table 11. Associated with each of the 10 critical challenges facing the aquaculture sector are the drivers underlying each challenge, and possible response options – investments, interventions and policies that might potentially be employed to address each challenge. These are outlined in Table 12. The challenges and potential response options formed the core of the stakeholder survey, the results of which are reported below in Tables 13 – 15.

The stakeholder consultations for aquaculture followed exactly the same format as those for agriculture. The nine policy objectives listed in Table 11 constituted the evaluation criteria by which subsequent sets of challenges and response options were to be evaluated. Stakeholders in each of the consultation meetings were first asked to score (e.g., weight) these criteria. Following that step, the 10 sets of challenges, drivers of each of those challenges, and possible response options addressing each challenge were presented and discussed in consultations in Split and Zagreb. Stakeholders then engaged in priority-setting exercises in which they were asked to score

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<sup>5</sup> World Bank, *Diagnostic Analysis: Fisheries and Aquaculture*, STARS Report to Ministry of Agriculture, Zagreb, May 2019.

each respective set of the 10 challenges and response options with respect to each of the nine criteria. As in the agriculture consultations, this was done in a matrix format, yielding a 90-cell

**Table 10. Critical Challenges Facing Croatia’s Aquaculture Sector**

1. To raise overall productivity levels in the aquaculture sector
2. To improve linkages between small producers and processors to domestic and international markets
3. To develop new market opportunities in high-value product segments
4. To better coordinate marine- and land-based activities and infrastructure investments within the EU’s “blue economy” strategy
5. To improve the system of disease control
6. To better support producer compliance with regulation of aquaculture in Croatian waters: environmental issues, predation, feed, antibiotics
7. To help the aquaculture sector adapt to increasing climate change impacts
8. To attract more youth and skilled labor to the aquaculture sector
9. To provide better institutional support for innovation in the freshwater water aquaculture sector
10. To achieve better sustainability in the aquaculture sector

(10x9) matrix of participant scores. (In the post-consultation analysis of the results, individual responses were weighted by the criteria assigned by each individual participant, the results were averaged across all participants, and the resulting final values were normalized to 100.) Lastly, participants in the meetings engaged in a final exercise that identified the top-ranked of the response options among the 29 total response options given. The results of the stakeholder consultations are summarized in Tables 16-18 and in the text below.

**Table 11. Aquaculture and Fisheries: EMFF and NDS Objectives, Beyond 2020**

<i>Economic Growth and Development</i>	1. <b>Strengthen Market Orientation and Competitiveness:</b> Strategically attract private investment; create a stimulating environment for innovation and entrepreneurial endeavors; increase growth and development of SME's
	2. <b>Promote Viable Incomes:</b> Combat poverty and the social exclusion of all vulnerable groups
	3. <b>Achieve Food Security:</b> Contribute to food security in the Union through competitive and sustainable fisheries/aquaculture and markets
<i>Environment and Climate</i>	4. <b>Promote Sustainable Natural Resource Management/ Conservation:</b> Foster sustainable fisheries/aquaculture and the conservation of biological resources
	5. <b>Address Climate Change:</b> Move to a smart, circular, and climate resilient society; promote energy transition and renewable energy sources; increase energy efficiency
	6. <b>Foster Good Governance/Efficient Public Administration:</b> Strengthen natural resource governance and enable safe, secure, clean and sustainably managed water resources
<i>Coastal and Rural Development</i>	7. <b>Promote Local/Territorial Development:</b> Enable the growth of a sustainable “blue economy” and foster prosperous communities; encourage policies and investments that enable regions to achieve a competitive and balanced economic potential; enhance the <i>complementary development</i> of fisheries/aquaculture with a sustainable and development-oriented tourism sector
	8. <b>Support Youth/Labor Development:</b> Resolve demographic challenges and revitalize the demographic structure; improve employability and ensure the development of necessary knowledge, skills and abilities
	9. <b>Develop Smart Technology:</b> Support development of the Digital Society

**Table 12. Drivers, Challenges, Possible Response Options, and EMFF/NDS Objectives Used in Aquaculture Consultations**

<b>Drivers</b>	<b>Critical Challenge</b>	<b>Possible Response Options</b>	<b>EMFF/NDS Objectives Addressed*</b>
<ul style="list-style-type: none"> <li>• Aging, inefficient aquaculture production systems and technologies</li> <li>• Production focused on too few species and activities</li> </ul>	<p><b>1. <i>To raise overall productivity levels in the aquaculture sector</i></b></p>	<ul style="list-style-type: none"> <li>• Modernize aquaculture production systems by adopting best management practices, technologies, and disease management measures in order to increase production efficiency</li> <li>• Evaluate feasibility of introduction of intensive monoculture (RAS) of high-value freshwater species that are now grown only in polyculture in carp ponds.</li> <li>• Evaluate expanding production to offshore locations (e.g. mussels) by using new technologies</li> <li>• Evaluate expanding of production of carp and trout in indoor aquaculture systems with new technologies</li> <li>• Support investments that reduce unit production costs by increasing the scale of production</li> <li>• Diversify production around potential new commercial species</li> <li>• Assess possibility of diversification of activities (breeding, recreation, education, hospitality) in selected freshwater fish farms to enhance financial and environmental sustainability</li> </ul>	<p>1 – 5, 9</p>
<ul style="list-style-type: none"> <li>• Industry too fragmented, difficult to achieve scale economies in marketing</li> <li>• Weak coordination of activities across the value chain</li> </ul>	<p><b>2. <i>To improve the linkages between small producers and processors to domestic and international markets</i></b></p>	<ul style="list-style-type: none"> <li>• Strengthen and increase the number of producer organizations, including those that will include producers and processors</li> <li>• Facilitate commercial partnerships between producers, processors, wholesalers, and retailers, especially in high value product segments (e.g. fresh, convenience, origin, and specialty products)</li> </ul>	<p>1 – 3, 7 – 9</p>
<ul style="list-style-type: none"> <li>• Marketing too focused on lower-value, undifferentiated commodity-type products</li> <li>• Inadequate attention to innovative marketing solutions</li> </ul>	<p><b>3. <i>To develop new market opportunities in high-value product segments</i></b></p>	<ul style="list-style-type: none"> <li>• Encourage the development of new marketing methods to increase the consumption of aquaculture products</li> <li>• Evaluate growth potential for higher-value domestic (tourism) and export markets, including “niche” markets, where higher prices are achievable</li> <li>• Secure quality and safety of aquaculture products</li> </ul>	<p>1 – 5, 7</p>



		<ul style="list-style-type: none"> <li>Assess potential for increased product differentiation, including through additional Protected Designation of Origin certifications Promote food destination tourism</li> </ul>	
<b>Table 12. Drivers, Challenges, Possible Response Options, and EMFF/NDS Objectives Used in Aquaculture Consultations (cont'd)</b>			
<b>Drivers</b>	<b>Critical Challenge</b>	<b>Possible Response Options</b>	<b>EMFF/NDS Objectives Addressed</b>
<ul style="list-style-type: none"> <li>Insufficient coordination of spatial planning mechanisms</li> <li>Inadequate diversification of aquaculture production activities and lack of integration with tourism activities</li> </ul>	<b>4. <i>To better coordinate marine- and land-based activities and infrastructure investments under the EU's "Blue Economy" strategy</i></b>	<ul style="list-style-type: none"> <li>Enable aquaculture farmers to carry out other economic activities, for example tourism. The Law on Aquaculture and the Law on Tourism already make it possible for farmers to carry out different tourism activities</li> <li>Improve regional and territorial development planning for islands and coastal areas, including improved marine spatial planning, data collection and analysis</li> </ul>	1 – 4, 6-7, 9
<ul style="list-style-type: none"> <li>Insufficient disease prevention, monitoring, and control mechanisms</li> </ul>	<b>5. <i>To improve the system of disease control</i></b>	<ul style="list-style-type: none"> <li>At the national level, improve disease control systems, especially the introduction of disease through imported fish</li> <li>Educate producers and encourage the development of biosecurity plans for each farm</li> <li>Support prevention of disease and reduced drug use by stimulating the use of immunostimulants, probiotics, vaccines, resistance programs, etc.</li> <li>Improve the well-being of cultured organisms</li> </ul>	1 – 4, 6
<ul style="list-style-type: none"> <li>Inadequate management plans, including for conservation planning</li> <li>Excessive vulnerability to fish losses due to predation</li> </ul>	<b>6. <i>To better support producer compliance with the regulation of aquaculture in Croatian waters (environmental considerations, feed, antibiotics)</i></b>	<ul style="list-style-type: none"> <li>Develop, implement, and monitor comprehensive management plans for freshwater aquaculture, including conservation measures for target species and habitat types</li> <li>Develop new mechanisms to address predation by seabirds on marine farms, including improved assessment and monitoring of species management, species alternatives, technological approaches, and repatriation to onshore farms when possible</li> </ul>	1 – 4, 7
<ul style="list-style-type: none"> <li>Increased exposure to climate change impacts and risks</li> <li>Current technologies inadequate to adapt to future impacts of climate change</li> </ul>	<b>7. <i>To help the aquaculture sector adapt to increasing climate change impacts</i></b>	<ul style="list-style-type: none"> <li>Conduct risk analyses and develop sector-specific risk management plans and measures: ecosystem protection, insurance markets, improved water management, research on new species, etc.</li> <li>Assess long-term prospects for climate warming impacts on growth rates</li> </ul>	1 – 7, 9

		<ul style="list-style-type: none"><li>• Support research on the introduction of technologies adapted to new climatic conditions</li></ul>	
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<b>Table 12. Drivers, Challenges, Possible Response Options, and EMFF/NDS Objectives Used in Aquaculture Consultations (cont'd)</b>			
<b>Drivers</b>	<b>Critical Challenge</b>	<b>Possible Response Options</b>	<b>EMFF/NDS Objectives Addressed</b>
<ul style="list-style-type: none"> <li>• Negative perception of opportunities in aquaculture, and lack of workers with adequate training</li> <li>• High start-up costs and tax burden in aquaculture</li> </ul>	<b>8. <i>To attract more youth and skilled labor to the aquaculture sector</i></b>	<ul style="list-style-type: none"> <li>• Promote sector opportunities through high schools, training centers, educational and outreach programs</li> <li>• Provide tax incentives to encourage young aquaculture producers</li> </ul>	1 – 3, 7 – 8
<ul style="list-style-type: none"> <li>• Inadequate public infrastructure supporting innovation in the freshwater aquaculture sector</li> <li>• Lack of applied research support for aquaculture and weak linkages between researchers, businesses, and producers</li> </ul>	<b>9. <i>To provide better institutional support for innovation in the freshwater aquaculture sector</i></b>	<ul style="list-style-type: none"> <li>• Assess the need to establish an Institute for Freshwater Aquaculture supporting experimental research, demonstration, and vocational training activities in the fresh aquaculture sector</li> <li>• Support innovation project partnerships between producers and researchers.</li> </ul>	1 – 5, 7 – 9
<ul style="list-style-type: none"> <li>• Aquaculture producers lack adequate access to modern, innovative, resource-conserving production technologies</li> </ul>	<b>10. <i>To achieve greater sustainability in aquaculture sectors</i></b>	<ul style="list-style-type: none"> <li>• Investigate synergistic effects by combining aquaculture and other economic activities, e.g. biogas production from waste and waste water from aquaculture and processing</li> <li>• Facilitate the development of indoor recirculating (RAS) production systems and promote circular bioeconomy value chains (e.g. Integrated Multi-Trophic Aquaculture (IMTA)) that convert waste into value-added products</li> </ul>	1 – 5, 7, 9

\* See Table 10 for nine EMFF/NDS objective

**Table 13. Responses to Stakeholder Survey: Aquaculture**

<b>Responses*</b> (top 3 highlighted)	<b>Critical Challenges (and associated Response Options**) for Croatian Aquaculture</b>
<b>21</b>	1. To raise overall productivity levels in the aquaculture sector
<b>13</b>	2. To improve linkages between small producers and processors to domestic and international markets
<b>17</b>	3. To develop new market opportunities in high- value product segments
<b>16</b>	4. To better coordinate marine- and land-based activities and infrastructure investments under the EU’s “Blue Economy” strategy
11	5. Improve the system of disease control
15	6. To better support producer compliance with the regulation of aquaculture in Croatian waters (environmental considerations, feed, antibiotics)
7	7. To help the aquaculture sector adapt to increasing climate change impacts
9	8. To attract more youth and skilled labor to the aquaculture sector
2	9. To provide better institutional support for innovation in the freshwater aquaculture sector
9	10. To achieve greater sustainability in aquaculture sectors

\*Each respondent was asked to identify 4 priority challenges among the 10 listed in the survey. The top 3 aggregate responses are **bolded** above.

\*\* Possible response options are given in Table 12.

### **Survey Results**

The national online survey of aquaculture sector stakeholders extended between May and June, 2019. Thirty individuals responded to the survey. Respondents were asked to identify four (4) of the 10 critical challenges and associated response options that they designated most important to them,<sup>6</sup> and where they considered the greatest potential lies for improving the prospects of Croatian aquaculture.

Results from the survey are given in Table 13. The priority responses indicated by stakeholders range across all 10 areas, but several are the most prominent; they are (in order): 1) to raise overall productivity levels in the aquaculture sector (21 responses); 2) to develop new market opportunities in high-value product segments (17 responses); 3) to better coordinate marine- and land-based activities and infrastructure investments under the EU’s “Blue Economy” strategy (16 responses); and 4) to better support producer compliance with the regulation of aquaculture in Croatian waters (environmental considerations, feed, antibiotics; 15 responses). These priorities

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<sup>6</sup> Accordingly, the sum of priority responses is approximately four times the total number of survey respondents.

correspond with numerous of the priority areas raised in other meetings and consultations with industry leaders and stakeholders.

**Table 14. Summary of Survey Information from Respondents: Aquaculture**

<b>Affiliation of Respondents, by activity:*</b>	<b>Number of Responses</b>
Aquaculture production	18
Fish/food processing	4
Food distribution (wholesale, retail, logistics)	5
Association of food manufacturers or retailers	1
University and research institutions	4
Public administration	4
Consultant	2
Governmental organization or Local Action Group in fisheries (FLAG)	9
Other	2
<b>Total</b>	<b>49*</b>
<b>Gender:</b>	
Male	21
Female	9
<b>Total</b>	<b>30</b>
<b>Age:</b>	
< 40 years	9
40-60 years	16
> 60 years	5
<b>Total</b>	<b>30</b>
<b>Experience:</b>	
< 5 years	8
5-10 years	4
> 10 years	18
<b>Total</b>	<b>30</b>

\*There were numerous multiple responses for “affiliation”

Other questions regarding respondents’ demographic information and institutional affiliations were also asked in the survey. These results are summarized in Table 14. Most respondents reported as being engaged in aquaculture production (18 respondents), although numerous respondents reported multiple affiliations. Two-thirds (21) of respondents were male, and about one-third (9) female. Just over half (16 of 30) of respondents were aged 40-60 years, with about one-third (9 respondents) 40 years or less and only five over 60 years of age. In terms of experience, 18 of the 30 respondents reported having more than 10 years of experience in aquaculture with the remaining respondents reporting less than 5 years of experience (8 of 30) or between 5 and 10 years of experience (4 of 30).

As in the case of the agriculture survey, respondents were also asked if they wished to volunteer additional suggestions regarding critical challenges and potential response options for Croatian aquaculture beyond those given in given in Table 12. These responses were many and are not fully reported here, but selected responses are presented in Table 15, as they relate, respectively, to the areas represented by the 10 critical challenges. Many of these suggestions were centered on three main areas:

- Expanding existing markets, and developing new markets, for Croatian fish and fish products, especially in retail and other high-value product segments (Critical Challenge 3);
- Addressing regulatory – especially environmental and conservation - compliance-related questions (Critical Challenge 6); and
- Providing better institutional support for innovation in the freshwater aquaculture sector markets (Critical Challenge 9).

A representative number of these suggestions are given in Table 6.

**Table 15. Selected Additional Recommendations in Stakeholder Survey: Aquaculture**

<b>Critical Challenges</b>	<b>Additional Recommended Response Options</b>
<b>1. To raise overall productivity levels in the aquaculture sector</b>	<ul style="list-style-type: none"> <li>• Take better advantage of stakeholder expertise and practices and input from other EU countries</li> </ul>
<b>2. To improve linkages between small producers and processors to domestic and international markets</b>	<ul style="list-style-type: none"> <li>• Establish freshwater FLAGs to connect micro and small producers and processors of freshwater fish</li> </ul>
<b>3. To develop new market opportunities in high-value product segments</b>	<ul style="list-style-type: none"> <li>• Labeling of mussel farming as indigenous breeding (enable EU funds)</li> <li>• Introduce new species</li> <li>• Provide support for new market entry in public sector (schools, military, dormitories, etc.)</li> <li>• Include Croatian Chamber of Commerce in exploring the potential for selling freshwater aquaculture products in Danube Basin region</li> <li>• Support efforts to make consumers more aware of Croatian fish and fish products</li> <li>• Promote/support domestic fish markets</li> </ul>
<b>4. To better coordinate marine- and land-based activities and infrastructure investments under the EU’s “Blue Economy” strategy</b>	<ul style="list-style-type: none"> <li>• Carp fish farmers should install flood defense systems, including diversion, catchment extension, discharge, and dam management features.</li> <li>• Preserve ponds as high-value agricultural land with high biodiversity; raise their competitive position in the market</li> <li>• Make sure that road restrictions do not fish distribution more difficult</li> </ul>
<b>5. Improve the system of disease control</b>	<ul style="list-style-type: none"> <li>• Develop a strategic framework and guidelines for the occurrence of fish disease</li> </ul>
<b>6. To better support producer compliance with the regulation of aquaculture in Croatian waters (environmental considerations, feed, antibiotics)</b>	<ul style="list-style-type: none"> <li>• Streamline aquaculture/mariculture administration (concession fees, location permits, approval processes, etc.), pay more attention to producer incentives, reduce tax burden</li> <li>• Conservation measures should include a way to compensate producers for their losses</li> <li>• Damage compensation should use differentiated measures (subsidize flood protection, input subsidies, etc.)</li> <li>• Allow more exemptions from environmental regulations</li> <li>• Limit importation of low-quality products and/or increases taxes on imports</li> </ul>
<b>7. To help the aquaculture sector adapt to increasing climate change impacts</b>	<ul style="list-style-type: none"> <li>• Notification of aid available for drought damage</li> </ul>



<b>Table 15. Additional Recommendations in Stakeholder Survey: Aquaculture (cont.)</b>	
<b>Critical Challenges</b>	<b>Additional Recommended Response Options</b>
<b>8. To attract more youth and skilled labor to the aquaculture sector</b>	<ul style="list-style-type: none"> <li>• Cooperate with Ministry of Education in conducting professional practice of students in freshwater ponds</li> <li>• Facilitate cooperation of interested individuals and groups (tourists, students, etc.) with nearby aquaculture operations</li> </ul>
<b>9. To provide better institutional support for innovation in the freshwater aquaculture sector</b>	<ul style="list-style-type: none"> <li>• Top priority should be improved genetic selection</li> <li>• Improve harmonization of laws and regulations governing aquaculture among relevant Ministries with a new national law or ordinance.</li> <li>• Improve the work of state veterinary and inspection services</li> <li>• Simplify legal framework for mobile marketing of fish</li> </ul>
<b>10. To achieve greater sustainability in aquaculture sectors</b>	<ul style="list-style-type: none"> <li>• Assess the influence of mariculture on nutrient loading in local areas</li> </ul>

### **Stakeholder Consultation Results**

As noted above, for the first stakeholder exercises in both Split and Zagreb, participants were asked to evaluate (e.g., to weight) the relative importance of the nine specific EMFF and NDS policy objectives for aquaculture and fisheries identified in Table 11 as criteria by which the critical challenges and response options would subsequently be evaluated. The average weights assigned to these nine criteria by stakeholders in each of the consultations and the two groups averaged together are reported in Table 16.

The top three criteria are highlighted in Table 16. Evaluation Criterion 1 – that of “strengthen[ing] market orientation and competitiveness” – was the highest rated of the nine objectives overall by stakeholders (and in each consultation) with an overall weight of 0.21. Ranked second was Criterion 4 (“Promote Sustainable Natural Resource Management/Conservation”) with a weight of 0.17, and ranked third was Criterion 7 (“Promote Local/Territorial Development”) with a weight of 0.14. The other criteria all received lower scores, although the relative scores corresponded across participants in both locations. It is interesting to note that the top three scoring criteria respectively highlight the importance of the three major categories of policy objectives relating to Croatian aquaculture: 1) the economic environment and competitiveness, 2) environmental and conservation, and 3) territorial development.

**Table 16. Weighting of Stakeholders' Evaluation Criteria: Aquaculture.**

<b>Nine Evaluation Criteria*</b>	<b>Split Consultation</b> (n = 20)	<b>Zagreb Consultation</b> (n = 29)	<b>Overall Scores</b> (n = 49)
1. <b>Strengthen Market Orientation and Competitiveness:</b> Strategically attract private investment; create a stimulating environment for innovation and entrepreneurial endeavors; increase growth and development of SME's	<b>0.24</b>	<b>0.18</b>	<b>0.21</b>
2. <b>Promote Viable Incomes:</b> Combat poverty and the social exclusion of all vulnerable groups	0.04	0.05	0.05
3. <b>Achieve Food Security:</b> Contribute to food security in the Union through competitive and sustainable aquaculture and markets	0.11	0.11	0.11
4. <b>Promote Sustainable Natural Resource Management/ Conservation:</b> Foster sustainable aquaculture and the conservation of biological resources	<b>0.17</b>	<b>0.17</b>	<b>0.17</b>
5. <b>Address Climate Change:</b> Move to a smart, circular, and climate resilient society; promote energy transition and renewable energy sources; increase energy efficiency	0.10	0.05	0.07
6. <b>Foster Good Governance/Efficient Public Administration:</b> Strengthen natural resource governance and enable safe, secure, clean and sustainably managed water resources	0.08	0.10	0.09
7. <b>Promote Local/Territorial Development:</b> Enable the growth of a sustainable "blue economy" and foster prosperous communities; encourage policies and investments that enable regions to achieve a competitive and balanced economic potential; enhance the <i>complementary development</i> of fisheries/aquaculture with a sustainable and development-oriented tourism sector	<b>0.10</b>	<b>0.16</b>	<b>0.14</b>
8. <b>Support Youth/Labor Development:</b> Resolve demographic challenges and revitalize the demographic structure; improve employability and ensure the development of necessary knowledge, skills and abilities	0.09	0.10	0.10
9. <b>Develop Smart Technology:</b> Support development of the Digital Society	0.07	0.09	0.08
<b>TOTAL</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>

\*"Criteria" here, and used in subsequent evaluation (Table 16), are defined on the basis of EMFF and NDS objectives (Table 10). Top three results are in **bold**.

In the final step of the priority-setting exercise, as described above, stakeholders were asked to evaluate (e.g., score) each of the ten (10) sets of challenges and response options in Table 12 by their *importance in successfully transforming Croatian aquaculture*, with each of the 10 alternatives evaluated according to each criterion. (This prioritization process weights the scores for each challenge and corresponding set of response options by the respective weights in Table 16, for each individual participant). The results, averaged across all participants, are given in Table 17.

The top-rated priority challenge (with its associated response options) among participants in both the Split and Zagreb consultations (and, consequently, overall) is “To raise overall productivity levels in the aquaculture sector,” having a weighted overall score of 74.1. Beyond that, the results in the two locations differ somewhat. In the Split consultation, the second-ranked priority was “To develop new market opportunities in high-value product segments” (score = 71.0), and third was “To improve linkages between small producers and processors with domestic and international markets” (score = 68.8). In the Zagreb consultation, the second-rated priority was “To provide better institutional support for innovation in the freshwater aquaculture sector” (score = 71.4), and tied for third (both with a score of 70.9) were “To better support producer compliance with regulation of aquaculture in Croatian waters: environmental issues, predation, feed, antibiotics” and “To achieve better sustainability in the aquaculture sector.” Thus, one can see a greater focus on economic and competitiveness issues in the Split consultation, versus regulatory and institutional issues in the Zagreb consultation. Amongst participants overall, “achieving better sustainability” was ranked second (score = 69.9) and “improving linkages” between producers, processors and markets was ranked third (score = 69.0)

Finally, at the end of the stakeholder consultations, participants were asked to identify their “top 6” of the 29 total possible response options (associated with the 10 critical challenges) listed in Table 12 (column 3). These results are reported in Table 18 (the results from both Split and Zagreb consultations are combined due to the small samples). The priority responses range widely across the different response options. Four different response options received 20 “votes” each: 1) “Facilitate commercial partnerships between producers, processors, wholesalers, and retailers, especially in high value product segments”; 2) “Facilitate aquaculture farmers to carry out other economic activities linked to land-based economy (e.g. tourism)”; 3) “Support innovation project partnerships between producers and researchers;” and 4) “Promote circular bioeconomy value chains that convert waste into value-added products.” Two other options received 19 “votes”: “Encourage the development of new marketing methods to increase the consumption of aquaculture products,” and “Support prevention of disease and reduced drug use by promoting the use of immunostimulants, probiotics, vaccines, resistance programs, etc.” Even the most highly ranked options, then, we observed a diversity of priorities across market-oriented, technological, fish health, and broad economic development-oriented options.

**Table 17. Priority-setting Results for Aquaculture Stakeholder Consultations: Average Scores of Critical Challenges and Response Options**

<b>Challenges (and Response Options*)</b>	<b>Split Consultation (n = 18)</b>	<b>Zagreb Consultation (n = 23)</b>	<b>Overall Scores of Challenges &amp; Response Options (n = 41)</b>
<b>1. To raise overall productivity levels in the aquaculture sector</b>	<b>74.0</b>	<b>74.3</b>	<b>74.1</b>
<b>2. To improve linkages between small producers and processors with domestic and international markets</b>	<b>68.8</b>	69.2	<b>69.0</b>
3. To develop new market opportunities in high-value product segments	<b>71.0</b>	66.2	68.3
4. To better coordinate marine- and land-based activities and infrastructure investments within the EU's "blue economy" strategy	64.4	62.1	63.1
5. To improve the system of disease control	61.4	67.4	64.7
6. To better support producer compliance with regulation of aquaculture in Croatian waters: environmental issues, predation, feed, antibiotics	63.4	<b>70.9</b>	67.6
7. To help the aquaculture sector adapt to increasing climate change impacts	59.9	64.5	62.5
8. To attract more youth and skilled labor to the aquaculture sector	55.1	69.3	63.1
9. To provide better institutional support for innovation in the freshwater aquaculture sector	58.5	<b>71.4</b>	65.7
<b>10. To achieve better sustainability in the aquaculture sector</b>	68.6	<b>70.9</b>	<b>69.9</b>

\*For detailed listing of specific response options associated with each challenge, see Table 11. Top three results are in **bold**.

**Table 18. Prioritized Response Options Selected by Aquaculture Stakeholder Consultation Participants (\* = top 6 selected)**

<b>Critical Challenge</b>	<b>Possible Response Options</b>	<b>No. Selected</b>
<b>1. To raise overall productivity levels in the aquaculture sector</b>	• Adopt best management practices, technologies and disease management systems	12
	• Introduce intensive monoculture (RAS) of high-value freshwater species, now grown only in polyculture in carp ponds	5
	• Expand production to offshore locations (e.g. mussels) by using new technologies	3
	• Expand the use of carp and trout production in indoor aquaculture systems	8
	• Diversify production around potential new commercial species	13
	• Diversify production activities (breeding, recreation, hospitality)	9
<b>2. To improve the linkages between small producers and processors to domestic and international markets</b>	• Strengthen producer organizations, including those further downstream the value chain (e.g. basic processing)	15
	• Facilitate commercial partnerships between producers, processors, wholesalers, and retailers, especially in high value product segments: fresh, convenience, origin, and specialty products	<b>20*</b>
<b>3. To develop new market opportunities in high value product segments</b>	• Facilitate access to higher-value domestic (tourism) and export markets, including ‘niche’ markets, where higher prices are achievable	17
	• Increase product differentiation, including through additional recognized certifications	17
	• Encourage the development of new marketing methods to increase the consumption of aquaculture products	<b>19*</b>
	• Promote food destination tourism	7
<b>4. To better coordinate marine- and land-based activities and infrastructure investments, including within the EU’s “blue economy” strategy</b>	• Improve regional and territorial development planning for islands and coastal areas, including improved marine spatial planning, data collection and analysis	15
	• Facilitate aquaculture farmers to carry out other economic activities linked to land-based economy (e.g. tourism)	<b>20*</b>
<b>5. To improve the system of disease control</b>	• At the national level, improve disease control systems, especially from introduction of disease through imports	13
	• Educate producers and encourage the development of biosecurity plans for each farm	12

	<ul style="list-style-type: none"><li>• Support prevention of disease and reduced drug use by promoting the use of immunostimulants, probiotics, vaccines, resistance programs, etc.</li></ul>	<b>19*</b>
	<ul style="list-style-type: none"><li>• Improve the well-being of cultured organisms</li></ul>	4

**Table 18. Prioritized Response Options Selected by Aquaculture Stakeholder Consultation Participants (cont'd)**

<b>Critical Challenge</b>	<b>Possible Response Options</b>	<b>No. Selected</b>
<b>6. To better support producer compliance with the regulation of aquaculture in Croatian waters: environmental issues, predation, feed, antibiotics</b>	• Develop, implement and monitor comprehensive management plans for freshwater aquaculture, including conservation measures for target species and habitat types	16
	• Develop new mechanisms to address predation by seabirds and other animals, including improved assessment and monitoring of species management, species alternatives, technological approaches, and repatriation to onshore farms when possible	18
<b>7. To help the aquaculture sector adapt to increasing climate change impacts</b>	• Conduct risk analyses and develop sector-specific risk management plans and measures: ecosystem protection, insurance markets, improved water management, research on new species, etc.	15
	• Assess long-term prospects for temperature increase impacts on growth rates	4
	• Support research on the development of technologies adapted to new climatic conditions	14
<b>8. To attract more youth and skilled labor to the aquaculture sector</b>	• Promote sector opportunities through high schools, training centers, educational and outreach programs	15
	• Provide tax incentives to encourage young aquaculture producers	10
<b>9. To provide better institutional support for innovation in the freshwater aquaculture sector</b>	• Assess the need to establish an Institute for Freshwater Aquaculture to support experimental research, demonstration, and vocational training activities in the fresh aquaculture sector	7
	• Support innovation project partnerships between producers and researchers	<b>20*</b>
<b>10. To achieve greater sustainability in the aquaculture sector</b>	• Facilitate the development of indoor recirculating (RAS) production systems	8
	• Promote circular bioeconomy value chains that convert waste into value-added products – e.g., aquaponics, bioplin, composting, integrated multi-trophic aquaculture (impa)	<b>20*</b>

Note: 41 participants were each asked to prioritize nine of the 29 specific response options, which yielded the counts above.

## Conclusions

Compared to the stakeholder consultations for agriculture, the different stakeholder-based inputs for aquaculture – the stakeholder survey, criteria weighting, and priority-setting exercises – yielded a more diverse and less definitive set of outcomes. The major consensus priority that emerges is a broad focus on *the need to increase productivity in the aquaculture sector*. This encompasses improved management practices, technologies, disease management, and other production-oriented aspects. Closely related to this production focus is that of *strengthening competitiveness and the market orientation of the sector*, including attracting increased private investment, stimulating the entrepreneurial sector, and enhancing the growth and broader market linkages of small and medium-sized enterprises.

Perhaps it is not surprising, in a sector that is heavily regulated and in which environmental constraints play such an important role, that *supporting stakeholders' ability to deal with regulatory and institutional issues* is also very prominent in stakeholders' views. This is apparent through the expressed priority of supporting producer compliance with environmental regulations that arise in permitting processes (concession fees, location permits and approvals, etc.), the management of aquaculture ponds, control of fish diseases, management of pond discharge, bird predation and compensation schemes, and in various other environmental contexts. There is a sense among many stakeholders that the environmental sustainability of the aquaculture is under threat from many sides and supporting sector stakeholders in dealing with these issues is a high priority. Institutional issues also arise in promoting aquaculture in the context of sustainable rural and territorial development strategies, in particular, in the need to foster the complementary development with the growing tourism sector.

## 4. Fisheries Sector Results

The national online survey of fisheries sector stakeholders was also conducted during May and June, 2019. A stakeholder consultation meeting, which included formal priority-setting exercises by stakeholders, was held in Split on May 27, 2019. The results of these stakeholder consultation efforts are reported here in Tables 19 – 26 and in the discussion below.

Our sector diagnostic of Croatian fisheries and aquaculture<sup>7</sup>, along with related analysis and a series of stakeholder meetings extending between 2018 and 2019, identified eight critical

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<sup>7</sup> World Bank, *Diagnostic Analysis: Fisheries and Aquaculture*, STARS Report to Ministry of Agriculture, Zagreb, May 2019.



challenges facing the fisheries sector. These are listed in Table 19. These challenges are closely related to the nine main policy objectives for fisheries and aquaculture drawn from recent

**Table 19. Key Challenges Facing Croatia’s Fisheries Sector**

1. To strengthen coordination between marine- and land-based activities (tourism) and infrastructure investments within “Blue Economy” approach
2. To optimize local revenues and jobs generated by existing capture fishery activities
3. To strengthen producer organizations and associations of small producers
4. To streamline the regulatory framework and improve support for producer compliance with regional and national species management plans and regulations
5. To raise overall productivity levels in the fisheries sector, within established constraints of sustainability
6. To strengthen the adaptation of the fisheries sector to increasing impacts of climate change
7. To attract more youth and skilled labor to the aquaculture sector
8. To strengthen institutional, technical and analytical capacity for enabling participatory and evidence-based fisheries resource management, policy design, and implementation at the regional and national level, including for small-scale fishing operations

documents of the European Maritime and Fisheries Fund (EMFF) and reports for Croatia’s proposed National Development Strategy (NDS), which were discussed in the previous section (and summarized in Table 11 above). These objectives, which were used as evaluation criteria in the stakeholder priority-setting exercises reported below, fall into three different areas – economic growth and development, environment and climate, and coastal and rural development. Associated with each of the eight critical challenges facing the fisheries are the major drivers underlying each challenge, and possible response options to address each challenge. These three elements – drivers, challenges, and possible response options – are outlined in detail in Table 20. The challenges and potential response options comprised the core of the stakeholder survey, the results of which are reported below in Tables 21 – 23.

The stakeholder consultations for fisheries followed the same organization and format as those for agriculture and aquaculture that have been outlined above. The nine policy objectives listed in Table 11 were used as evaluation criteria by which the challenges above (Table 19) and possible response options addressing those challenges were evaluated. Stakeholders in the consultation meeting were asked to undertake three priority-setting exercises. First, they were asked to score (e.g., weight) the evaluation criteria. Second, following presentation and extensive discussion of the eight sets of challenges, drivers and response options, stakeholders engaged in a priority-setting exercise in which they scored each set of the eight challenges and response options with respect to each of the nine criteria, that is, in a 72-cell (8x9) scoring matrix. These data were analyzed following the consultation meeting, individual responses were weighted by the criteria assigned by each participant, the results were averaged across all participants, and the average results normalized to 100. Lastly, participants in the consultation were asked to identify the nine top-ranked of the 23 total response options given in Table 20. The results of the stakeholder consultations are summarized in Tables 24 – 26 and in the text below.

**Table 20. Drivers, Challenges, Possible Response Options, and EMFF/NDS Objectives Used in Stakeholder Consultations: Fisheries**

Drivers	Critical Challenge	Possible Response Options	EMFF/NDS Objectives Addressed*
<ul style="list-style-type: none"> <li>• Inadequate and sub-optimally sited infrastructure</li> <li>• Competitive, non-symbiotic, relationship between fisheries and tourism</li> <li>• Inadequate planning for coastal spatial development</li> <li>•</li> </ul>	<p><b>1. To strengthen coordination between marine- and land-based activities (tourism) and infrastructure investments within “Blue Economy” approach</b></p>	<ul style="list-style-type: none"> <li>• Invest in infrastructure (landing sites, ports, roads, markets) at selected sites</li> <li>• Promote coastal tourism that <i>complements</i> fisheries: local fish markets, fisheries heritage and culture, etc.</li> <li>• Improve regional and territorial development planning for islands and coastal areas: spatial planning, data collection and analysis, etc.</li> </ul>	1, 2, 4 – 9
<ul style="list-style-type: none"> <li>• Traditional markets do not fully capture potential fishery values</li> <li>• Low domestic fish consumption</li> <li>• Limited number of species currently fished</li> </ul>	<p><b>2. To optimize local revenues and jobs generated by existing capture fishery activities</b></p>	<ul style="list-style-type: none"> <li>• Diversify existing capture fishery value chains toward growth opportunities in strategic market segments: fresh/convenience, eco-certification, etc.</li> <li>• Increase domestic consumption of nationally caught or produced fish (e.g. marketing campaigns, school lunch programs, etc.)</li> <li>• Develop value chains around new, potentially commercial species (e.g. meagre)</li> </ul>	1 – 3, 7
<ul style="list-style-type: none"> <li>• Fragmented production structure</li> <li>• Underdeveloped value chains</li> <li>• Increasing costs to comply with rising international quality standards</li> <li>• Insufficient access to market information/intelligence</li> </ul>	<p><b>3. To strengthen producer organizations and associations of small producers</b></p>	<ul style="list-style-type: none"> <li>• Strengthen and increase the number of producer organizations within capacity limits</li> <li>• Facilitate commercial partnerships between fishers, producer org’s and food industry firms, esp. in high-value sectors</li> <li>• Support the adoption of international standards (marine stewardship council, organic, eco, etc.)</li> <li>• Support more market research, including the potential for domestic value-added production of selected species</li> </ul>	1, 2, 7
<ul style="list-style-type: none"> <li>• Weak alignment between support measures and management plans</li> <li>• Delays in adaptive species management and lack of capacity to evaluate socio-economic impacts</li> </ul>	<p><b>4. To streamline the regulatory framework and improve support for producer compliance with</b></p>	<ul style="list-style-type: none"> <li>• Link EMFF and national support measures more closely with regional and national management plans and regulations</li> <li>• Improved assessment and monitoring of species management and socio-economic impacts</li> </ul>	

Inefficient stakeholder communications	<b>regional and national species management plans and regulations</b>	<ul style="list-style-type: none"> <li>• Improve communications of fisheries management measures to stakeholders, including marketing sector and consumers</li> </ul>	
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**Table 20. Drivers, Challenges and Possible Response Options in Stakeholder Consultations: Fisheries (cont'd)**

<b>Drivers</b>	<b>Critical Challenge</b>	<b>Possible Response Options</b>	<b>EMFF/NDS Objectives Addressed</b>
<ul style="list-style-type: none"> <li>• Old, fuel inefficient fleet without adequate safety measures</li> <li>• Inefficiencies in existing equipment and technologies</li> </ul>	<b>5. To raise overall productivity levels in the fisheries sector, within established constraints of sustainability</b>	<ul style="list-style-type: none"> <li>• Improve/upgrade the existing fishing fleet, to improve fuel efficiency and safety measures, without contributing to overcapacity</li> <li>• Achieve greater economic impacts, including scale efficiency</li> </ul>	1 – 5, 7 – 9
<ul style="list-style-type: none"> <li>• Increasing climate change impacts on existing fish stocks</li> <li>• Increased risks facing fisheries management</li> </ul>	<b>6. To strengthen the adaptation of the fisheries sector to increasing impacts of climate change</b>	<ul style="list-style-type: none"> <li>• Strengthen stock resilience through reduction in overfishing and enhanced management</li> <li>• Conduct risk analyses and develop sector-specific risk management plans and measures: ecosystem protection, insurance markets, vessel safety measures, research on species range, alien species and productivity shifts, etc.</li> </ul>	1 – 7, 9
<ul style="list-style-type: none"> <li>• Aging labor force and skills mismatches</li> <li>• Insufficient linkages between fisheries- and tourism-related job opportunities</li> <li>• High start-up costs and tax burden</li> </ul>	<b>7. To attract more youth and skilled labor to the aquaculture sector</b>	<ul style="list-style-type: none"> <li>• Promote sector opportunities through high schools, training centers, educational and outreach programs</li> <li>• Promote tourism job opportunities linked to fisheries and fishery-based communities that attract youth</li> <li>• Provide tax incentives to encourage young producers</li> </ul>	1 – 3, 7 – 9
<ul style="list-style-type: none"> <li>• Gaps in catch data</li> <li>• Insufficient human and technical resources</li> <li>• Weaknesses in monitoring, surveillance and control system</li> </ul>	<b>8. To strengthen institutional, technical and analytical capacity for enabling participatory and evidence-based fisheries resource management, policy design, and implementation at the regional and national level, including for</b>	<ul style="list-style-type: none"> <li>• Adopt or improve digital technologies for improved catch data collection, including for small-scale production</li> <li>• Strengthen administrative capacity</li> <li>• Upgrading monitoring, surveillance and control system</li> </ul>	1 – 9

	<b>small-scale fishing operations</b>		
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\* See Table 11 for nine EMFF/NDS objectives.

**Table 21. Responses to Stakeholder Survey: Fisheries**

<b>Responses*</b> (top 3 highlighted)	<b>Critical Challenges (and associated Response Options**) for Croatian Fisheries</b>
<b>36</b>	1. To strengthen coordination between marine- and land-based activities (tourism) and infrastructure investments within EU’s “blue economy” approach
20	2. To optimize local revenues and jobs generated by fisheries activities
19	3. To strengthen producer organizations and associations of small producers
19	4. To streamline the regulatory framework and improve support for producer compliance with regional and national species management plans and regulations.
19	5. To raise overall productivity levels in the fisheries sector, within established conservation boundaries
<b>23</b>	6. To strengthen the adaptation of the fisheries sector to increasing impacts of climate change
<b>25</b>	7. To attract more youth and skilled labor to the fisheries sector
15	8. To strengthen institutional, technical, and analytical capacity for participatory and evidence-based fisheries management, policy design, and implementation

\*Each respondent was asked to identify 4 priority challenges among the eight listed in the survey. The top 3 aggregate responses are **bolded** above.

\*\* Possible response options are given in Table 18.

### **Survey Results**

An online survey of the fisheries sector was made available to stakeholders in May and June, 2019. Forty-three (43) stakeholders responded to the survey. Respondents were asked to identify four (4) of the eight (8) critical challenges and associated response options that they designated “the most important for Croatia and where the greatest potential lies for improving Croatian fisheries”<sup>8</sup>. Results from the survey are presented in Table 21, and the survey itself is given in Appendix 3.

The priority responses indicated by fisheries sector stakeholders range widely across all eight areas, but three are the most commonly chosen priorities: Option 1) To strengthen coordination between marine- and land-based activities (tourism) and infrastructure investments within EU’s “blue economy” approach (36 responses) – by far the most highly prioritized area; Option 7) to attract more youth and skilled labor to the fisheries sector (25 responses); and Option 6) to strengthen the adaptation of the fisheries sector to increasing impacts of climate change. Four of the eight alternatives (Options 2 – 5) were ranked by stakeholders roughly similarly, with 19 or 20

<sup>8</sup> Accordingly, the sum of priority responses is approximately four times the total number of survey respondents.

responses each. These results are discussed further below in the context of the other priority-setting results.

**Table 22. Summary of Survey Information from Respondents: Fisheries**

<b>Affiliation of Respondents, by activity:*</b>	<b>Number of Responses</b>
Fish production	23
Fish processing	4
Food distribution (wholesale, retail, logistics)	8
Association of food manufacturers or retailers	4
University and research institutions	1
Public administration	3
Consultant	1
Governmental organization or Local Action Group in fisheries (FLAG)	3
Other	16
<b>Total</b>	<b>63*</b>
<b>Gender:</b>	
Male	38
Female	5
<b>Total</b>	<b>43</b>
<b>Age:</b>	
< 40 years	15
40-60 years	19
> 60 years	9
<b>Total</b>	<b>43</b>
<b>Experience:</b>	
< 5 years	6
5-10 years	7
> 10 years	30
<b>Total</b>	<b>43</b>

\*There were many multiple responses for “affiliation.”

The stakeholder survey also contained other questions regarding respondents’ institutional affiliations, experience levels, and demographic information. These results are summarized in Table 22. Just over half of respondents (23 of 43) reported as being engaged in primary fish production. All other affiliations were less widely represented in the survey (although numerous respondents reported multiple affiliations). Thirty-eight (or 88 percent) of the 43 respondents were male, and just five (12 percent) female. Nineteen (44 percent) of respondents were middle-aged (40-60 years), with 15 respondents (35 percent) aged 40 years or less and nine over 60 years of age. In terms of experience levels, 30 of the 43 respondents (70 percent of the total) reported more than 10 years of experience in the fishing industry with the remaining respondents

reporting less than 5 years of experience (6 of 43), or between 5 and 10 years of experience (7 of 43).



As with the agriculture and aquaculture surveys, respondents were also asked if they wished to volunteer further suggestions regarding the critical challenges and potential response options for Croatian fisheries, in addition to those given in Table 20. Many such responses were given and cannot be fully reported here. Selected responses are presented in Table 23, as they relate, respectively, to the areas represented by the eight critical challenges. Many of these suggestions were centered on three main areas:

- Options to enhance local revenues and jobs generated by fisheries activities (Critical Challenge 2) – it is notable that many of these additional responses focused on suggestions to expand markets, including consumer education, and introducing new marketing alternatives;
- Options to streamline the regulatory framework and improve producer compliance with regional and national species management plans and regulations (Critical Challenge 4). It should be noted that while some respondents urged a reduction in the administrative and regulatory burden facing the fishing industry, many others called for *additional* controls, regulations and enforcement of “no take” zones, destructive fishing equipment, night fishing, and other practices; and
- Options to increase productivity levels in the fishery sector (Critical Challenge 5), emphasizing needed investments, upgrades, and modernization of fishing boats, equipment, and infrastructure.

Many of the additional suggestions provided by survey respondents were based on extensive experience in the industry. It is evident from many of the survey responses that the benefits of controlling, monitoring, and enforcing regulations in the Croatian fisheries are apparent to many in the industry.

**Table 23. Additional Recommendations in Stakeholder Survey: Fisheries**

Critical Challenges	Additional Recommended Response Options
<b>1. To strengthen coordination between marine- and land-based activities (tourism) and infrastructure investments within EU’s “blue economy” approach</b>	<ul style="list-style-type: none"> <li>• Better connect fisheries and tourism, including supporting/promoting the maintenance of cultural traditions and restoring cultural heritage</li> </ul>
<b>2. To optimize local revenues and jobs generated by fisheries activities</b>	<ul style="list-style-type: none"> <li>• Strengthen Croatian fish and fisheries “brand,” including through educational and communication campaigns that promote local Croatian fish and fish products.</li> <li>• Require sellers catering to restaurants to emphasize the origin of fish, crustaceans and shellfish, to support local Croatian fish.</li> <li>• Invest in consumer education on healthy eating habits in order to expand fish sales</li> <li>• Reduce/subsidize fuel prices</li> </ul>
<b>3. To strengthen producer organizations and associations of small producers</b>	<ul style="list-style-type: none"> <li>• Create a true producer organization or cooperative for fisheries, also a series of wholesale markets, and link them with emerging markets</li> </ul>
<b>4. To streamline the regulatory framework and improve support for producer compliance with regional and national species management plans and regulations.</b>	<ul style="list-style-type: none"> <li>• Introduce/expand “no take” zones to promote fisheries development</li> <li>• Reduce administrative, regulatory and paperwork burden facing fishing industry’</li> <li>• Limit the use of “tramata” fishing boats, which destroy fish stocks</li> <li>• Abolish use of swarming net, "fružata" tools</li> <li>• Greater regulation and controls of sport fishing, including night fishing, underwater guns, etc., and greater punishment for illegal activity</li> <li>• Greater controls over shellfish and fishery concessions</li> <li>• Inspection and monitoring work should be based on actual fieldwork and interactions with fishermen</li> <li>• Facilitate access to EU grants</li> <li>• Return maritime management to the local community</li> </ul>
<b>5. To raise overall productivity levels in the fisheries sector, within established conservation boundaries</b>	<ul style="list-style-type: none"> <li>• Upgrade, and invest in new, landing areas, refrigeration facilities and other infrastructure that supports fishing industry</li> <li>• Support/subsidize modernization of fishing boats, with upgrading/replacement with smaller, more fuel efficient boats</li> <li>• Support greater selectivity of fishing gear to increase fishing efficiency</li> <li>• Upgrade technology in fish processing</li> <li>• Need greater attention to trash/garbage disposal in landing areas and fishing ports</li> </ul>

<b>Table 23. Additional Recommendations in Stakeholder Survey: Fisheries (cont.)</b>	
<b>Critical Challenges</b>	<b>Additional Recommended Response Options</b>
<b>6. To strengthen the adaptation of the fisheries sector to increasing impacts of climate change</b>	<ul style="list-style-type: none"> <li>• Climate change and its effects in the Adriatic Sea necessitates better protection and control of selected fishing areas</li> </ul>
<b>7. To attract more youth and skilled labor to the fisheries sector</b>	<ul style="list-style-type: none"> <li>• Educate/motivate young people to be mechanics, fishermen and everything else related to the maintenance of fishing and passenger ships</li> <li>• Enable young fishermen to have a safe berth at the communal ports</li> <li>• Grant mariculture concessions that favor young islanders</li> </ul>
<b>8. To strengthen institutional, technical and analytical capacity for enabling participatory and evidence-based fisheries resource management, policy design, and implementation at the regional and national level, including for small-scale fishing operations</b>	<ul style="list-style-type: none"> <li>• Greater representation of scientists and fishermen in adopted laws and regulations</li> <li>• Establish an advisory body within the Fisheries Management Board composed of experts, no more than 12 persons.</li> <li>• Enable experienced fishermen to actively participate in making regulatory decisions, laws and regulations.</li> </ul>

### **Stakeholder Consultation Results**

In the stakeholder exercise in the Split fisheries consultation meeting, participants were asked to weight the relative importance of the nine specific EMFF and NDS policy objectives for aquaculture and fisheries identified in Table 11 as criteria by which the critical challenges and response options for fisheries would subsequently be evaluated. The average weights assigned to these nine criteria by stakeholders in each of the consultations and the two groups averaged together are reported in Table 24.

The top three criteria are highlighted in Table 24. Stakeholders ranked Criterion 4 – “Promote Sustainable Natural Resource Management/Conservation” – as the highest rated of the nine objectives overall with an overall weight of 0.24. Ranked second was Criterion 4 (“Promote Local/Territorial Development”) with a weight of 0.17. Ranked third was Criterion 7 (“Strengthen Market Orientation and Competitiveness”) with a weight of 0.16. The other six criteria all received significantly lower scores. It is interesting to note that, as was the case with aquaculture, the top three ranked criteria highlight, respectively, the importance of the three major categories of policy objectives relating to Croatian fisheries and aquaculture (from Table 11), although in a different order: 1) environmental, conservation and natural resource management 2) local and territorial development, and 3) the economic environment and competitiveness.

In the final step of the priority-setting exercise, as previously described, stakeholders were asked to evaluate (e.g., score) each of the eight (8) sets of challenges and response options in Table 20

**Table 24. Weighting of Stakeholders' Evaluation Criteria: Fisheries.**

Nine Evaluation Criteria*	Average weights (n = 17)
1. <b>Strengthen Market Orientation and Competitiveness:</b> Strategically attract private investment; create a stimulating environment for innovation and entrepreneurial endeavors; increase growth and development of SME's	<b>0.16</b>
2. <b>Promote Viable Incomes:</b> Combat poverty and the social exclusion of all vulnerable groups	0.05
3. <b>Achieve Food Security:</b> Contribute to food security in the Union through competitive and sustainable fisheries and markets	0.07
4. <b>Promote Sustainable Natural Resource Management/ Conservation:</b> Foster sustainable fisheries and the conservation of marine biological resources	<b>0.24</b>
5. <b>Address Climate Change:</b> Move to a smart, circular, and climate resilient society; promote energy transition and renewable energy sources; increase energy efficiency	0.11
6. <b>Foster Good Governance/Efficient Public Administration:</b> Strengthen international ocean governance and enable safe, secure, clean and sustainably managed seas and oceans	0.07
7. <b>Promote Local/Territorial Development:</b> Enable the growth of a sustainable "blue economy" and foster prosperous coastal communities; encourage policies and investments that enable regions to achieve a competitive and balanced economic potential; enhance the <i>complementary development</i> of fisheries/aquaculture with a sustainable and development-oriented tourism sector that creates added value	<b>0.17</b>
8. <b>Support Youth/Labor Development:</b> Resolve demographic challenges and revitalize the demographic structure; improve employability and ensure the development of necessary knowledge, skills and abilities	0.10
9. <b>Develop Smart Technology:</b> Support development of the Digital Society	0.04
<b>TOTAL</b>	<b>1.00</b>

\*"Criteria" used in subsequent evaluation (Table 23) are defined on the basis of EMFF and NDS objectives. Top three results are in **bold**.

by their *importance in successfully transforming Croatian aquaculture*, with each of the 8 alternatives evaluated according to each criterion. (This prioritization process weights the scores for each challenge and associated set of response options by the corresponding weights given by each individual participant to the criteria in Table 24). The results, averaged across all participants, are given in Table 25.

The top-rated critical challenge (with its corresponding response options) among participants in the consultation was “To optimize local revenues and jobs generated by fisheries activities,” with a weighted overall score of 74.3. The second-ranked priority was “To strengthen producer organizations and associations of small producers,” with a score of 72.2). The third-ranked priority was “To strengthen coordination between marine- and land-based activities (tourism) and infrastructure investments within EU’s ‘blue economy’ approach,” having a score of 71.7. Closely behind was the fourth-ranked priority – “To raise overall productivity levels in the fisheries sector, within established conservation boundaries,” with a score of 70.3. Perhaps the major conclusion that emerges from this multi-criteria priority-setting exercise is the dominant concern among fisheries sector stakeholders with economic and competitiveness issues and sustaining the economic health of their industry. All of the top four ranked priorities, whether directly or indirectly, pertain to economic sustainability objectives.

Finally, at the end of the stakeholder consultations, participants were asked to identify their “top 9” of the 23 total possible response options corresponding with the eight critical challenges facing the fisheries sector (e.g., those listed in column 3 of Table 20). These results are reported in Table 26. The priority responses range widely across the different response options. Five response options received 10 or more “votes” from stakeholder participants; in rank order, they are: 1) “Increase domestic consumption of nationally caught or produced fish;” 2) “Facilitate commercial partnerships between producers, processors, wholesalers, and retailers, especially in high value product segments;” 2) “Invest in infrastructure (landing sites, ports, roads, markets) at selected sites;” 3) “Improve/upgrade the existing fishing fleet, to improve fuel efficiency and safety measures, without contributing to overcapacity;” 4) “Promote coastal tourism that *complements* fisheries: local fish markets, fisheries heritage and culture, etc.,” and 5) “Achieve greater economic impacts, including scale efficiency.” Again, these expressed prioritize reinforce the importance to stakeholders of taking diverse measures to sustain the economic viability of the industry.

**Table 25. Priority-setting Results for Fisheries Stakeholder Consultations: Average Scores of Critical Challenges and Response Options**

<b>Challenges (and Response Options*)</b>	<b>Overall Scores of Challenges &amp; Response Options (n = 17)</b>
<b>1. To strengthen coordination between marine- and land-based activities (tourism) and infrastructure investments within EU’s “blue economy” approach</b>	<b>71.7</b>
<b>2. To optimize local revenues and jobs generated by fisheries activities</b>	<b>74.3</b>
<b>3. To strengthen producer organizations and associations of small producers</b>	<b>72.2</b>
4. To streamline the regulatory framework and improve support for producer compliance with regional and national species management plans and regulations.	68.1
5. To raise overall productivity levels in the fisheries sector, within established conservation boundaries	70.3
6. To strengthen the adaptation of the fisheries sector to increasing impacts of climate change	65.6
7. To attract more youth and skilled labor to the fisheries sector	64.5
8. To strengthen institutional, technical, and analytical capacity for participatory and evidence-based fisheries management, policy design, and implementation	66.6

\*For detailed listing of specific response options, see Table 3. Top three results in **bold**.

**Table 26. Prioritized Response Options Selected by Fisheries Stakeholder Consultation Participants (\* = top 5 selected)**

<b>Critical Challenge</b>	<b>Possible Response Options</b>	<b>No. Selected</b>
<b>1. To strengthen coordination between marine- and land-based activities (tourism) and infrastructure investments within “Blue Economy” approach</b>	• Invest in infrastructure (landing sites, ports, roads, markets) at selected sites	<b>14*</b>
	• Promote coastal tourism that <i>complements</i> fisheries: local fish markets, fisheries heritage and culture, etc.	<b>10*</b>
	• Improve regional and territorial development planning for islands and coastal areas: spatial planning, data collection and analysis, etc.	2
<b>2. To optimize local revenues and jobs generated by existing capture fishery activities</b>	• Diversify existing capture fishery value chains toward growth opportunities in strategic market segments: fresh/convenience, eco-certification, etc.	5
	• Increase domestic consumption of nationally caught or produced fish (e.g. marketing campaigns, school lunch programs, etc.)	<b>16*</b>
	• Develop value chains around new, potentially commercial species (e.g. meagre)	4
<b>3. To strengthen producer organizations and associations of small producers</b>	• Strengthen and increase the number of producer organizations within capacity limits	5
	• Facilitate commercial partnerships between fishers, producer org’s and food industry firms, esp. in high-value sectors	9
	• Support the adoption of international standards (marine stewardship council, organic, eco, etc.)	3
	• Support more market research, including the potential for domestic value-added production of selected species	2
<b>4. To streamline the regulatory framework and improve support for producer compliance with regional and national species management plans and regulations</b>	• Link EMFF and national support measures more closely with regional and national management plans and regulations	5
	• Improved assessment and monitoring of species management and socio-economic impacts	6
	• Improve communications of fisheries management measures to stakeholders, including marketing sector and consumers	3
<b>5. To raise overall productivity levels in the fisheries sector, within</b>	• Improve/upgrade the existing fishing fleet, to improve fuel efficiency and safety measures, without contributing to overcapacity	<b>13*</b>
	• Achieve greater economic impacts, including scale efficiency	<b>10*</b>

<b>established constraints of sustainability</b>		
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<b>Table 26. Prioritized Response Options Selected by Fisheries Stakeholder Consultation Participants (cont'd)</b>		
<b>Critical Challenge</b>	<b>Possible Response Options</b>	<b>No. Selected</b>
<b>6. To strengthen the adaptation of the fisheries sector to increasing impacts of climate change</b>	• Strengthen stock resilience through reduction in overfishing and enhanced management	9
	• Conduct risk analyses and develop sector-specific risk management plans and measures: ecosystem protection, insurance markets, vessel safety measures, research on species range, alien species and productivity shifts, etc.	9
<b>7. To attract more youth and skilled labor to the aquaculture sector</b>	• Promote sector opportunities through high schools, training centers, educational and outreach programs	6
	• Promote tourism job opportunities linked to fisheries and fishery-based communities that attract youth	3
	• Provide tax incentives to encourage young producers	8
<b>8. To strengthen institutional, technical and analytical capacity for enabling participatory and evidence-based fisheries resource management, policy design, and implementation at the regional and national level, including for small-scale fishing operations</b>	• Adopt or improve digital technologies for improved catch data collection, including for small-scale production	5
	• Strengthen administrative capacity	2
	• Upgrading monitoring, surveillance and control system	4

Note: 17 participants were each asked to prioritize nine of the 23 options, which yielded the counts above.

## **Conclusions**

Even more than the results of the stakeholder consultations for aquaculture, the different stakeholder-based inputs for fisheries – including the stakeholder survey, criteria weighting, and priority-setting exercises – yielded a diverse and broad-ranging set of outcomes. Responses to the national survey of fisheries sector stakeholders highlighted three priorities; among others: 1) to strengthen the coordination between marine- and land-based activities (tourism) and infrastructure investments within EU’s “blue economy” approach; 2) to attract more youth and skilled labor to the fisheries sector; and 3) to strengthen the adaptation of the fisheries sector to the increasing impacts of climate change. Importantly, all three of these priorities address issues of long-run strategic importance to the economic sustainability of the sector: coordination of fisheries with the fast-growing tourism sector; attracting the next generation of skilled workers; and dealing with the critical long-run impacts of climate change.

By contrast, the priority-setting exercises conducted among stakeholders at the consultation meeting, while yielding a highly diverse set of outcomes, demonstrated a relatively greater concern with addressing economic and competitiveness issues facing the industry. The top three priorities that emerged in the consultations were (in order): 1) optimizing local revenues and jobs; 2) strengthening producer organizations and associations; and, as also highlighted in the stakeholder survey, 3) strengthening coordination between marine- and land-based activities (tourism) and infrastructure investments.

Overall, the outcomes of the various stakeholder consultation and priority-setting efforts for the fisheries sector demonstrate the wide-ranging nature of the needs and priorities faced by the sector. These range from achieving short-term economic goals – increasing jobs and incomes, and boosting investments in infrastructure and fishing fleet and equipment – to addressing longer-run economic challenges such as strengthening producer organizations and fostering innovative marketing and market development solutions, to tackling a number of long-run strategic and structural issues that will ensure the durability and success of the entire sector. These latter challenges include promoting sustainable fisheries management, fostering an enlightened regulatory environment and producer compliance with that environment, addressing challenges created by climate change, promoting a better integration of fisheries with the tourism sector, and attracting a younger and skilled labor force.

## Appendix 1: Ministry of Agriculture Stakeholder Survey: Agriculture

As part of its strategic planning process for the next EU Common Agricultural Policy (CAP) budget period (2021-2027), the Ministry of Agriculture is soliciting input from agri-food sector stakeholders regarding prospects and opportunities for Croatian agriculture. Your responses will support this process by helping us assess the critical issues affecting Croatian agriculture today and the direction of future opportunities, including policy changes, where appropriate. Thank you very much for your input to this survey.

Please answer the following questions. Your answers will be kept confidential and only reported in aggregated format. The last question provides an opportunity for you to offer any additional comments you may have.

1. The columns below identify 14 “challenges” affecting Croatian agriculture and examples of possible response options. **Please indicate with a check mark (√) in Column 1 the eight (8) sets of challenges and response options** that you believe are *the most important* for Croatia and where the greatest potential lies for improving Croatian agriculture. Please do not check more than eight. *Note: if you disagree with the specific examples of response options given, in Question #2, you may offer your own suggestions.*

TOP 8 PRIORITY? √ = YES	Nr	CHALLENGES FACING CROATIAN AGRICULTURE	EXAMPLES OF POSSIBLE RESPONSE OPTIONS
	1	To raise productivity levels in the agri-food sector	<ul style="list-style-type: none"> <li>• Increase private capital investment in the agri-food sector</li> <li>• Diversify production systems at the level of agriculture holdings</li> <li>• Promote production of value-added products</li> <li>• Improve access to quality education, training, knowledge, technology, and information</li> </ul>
	2	To improve the business environment for producers and agribusiness SMEs	<ul style="list-style-type: none"> <li>• Streamline the regulatory environment</li> <li>• Reduce tax burden</li> <li>• Facilitate access to customized financial products and services</li> <li>• Improve public services (infrastructure, research, extension, and policy environment) for the agri-food sector.</li> </ul>
	3	To promote greater innovation in the agri-food sector	<ul style="list-style-type: none"> <li>• Strengthen research and development activity</li> <li>• Promote the transfer of scientific innovations, (digital) technologies, and best practices</li> <li>• Test innovative ideas at the level of farm holdings</li> <li>• Enable project-based innovation partnerships linking producers, businesses, researchers, and public sector institutions</li> </ul>

	4	To increase the production of high-value crops	<ul style="list-style-type: none"> <li>• Expand producer access to irrigation water and adoption of on-farm irrigation management systems</li> <li>• Promote applied research on high value crop varieties</li> <li>• Ensure access to specialized advisory activities</li> <li>• Facilitate investments in cold storage facilities</li> </ul>
	5	To foster expanded and better integrated markets for Croatian agri-food products	<ul style="list-style-type: none"> <li>• Provide improved market information and targeted export promotion to producers and agribusinesses</li> <li>• Facilitate the development of e-commerce and social network platforms</li> <li>• Create competitive markets for advanced logistics services</li> <li>• Support investments in product differentiation, including improved branding, packaging, and labeling of agricultural products (e.g. regional/national appellation)</li> </ul>
	6	To strengthen the links of small producers and agribusiness SMEs (small- and medium-sized enterprises) with domestic and international markets	<ul style="list-style-type: none"> <li>• Strengthen producer organizations</li> <li>• Facilitate commercial partnerships among SMEs and between producers, producer organizations, and food industry firms, especially in high-value product sectors</li> <li>• Support the adoption of private international standards (e.g. GlobalG.A.P., ISO, etc.)</li> <li>• Promote food destination tourism</li> </ul>
	7	To manage the vulnerability and exposure of the agri-food sector to increasing climate change risks	<ul style="list-style-type: none"> <li>• Improve water supply systems and management (irrigation, drainage, flood protection)</li> <li>• Promote applied research on climate-smart agricultural technologies and practices, and promote these through specialized technical advice to farmers and improved dissemination</li> <li>• Provide national-level climate forecasting information and agroclimatic suitability data to producers</li> <li>• Provide index-based insurance to producers.</li> </ul>
	8	To reduce waste, pollution, and GHG emissions emanating from the agri-food sector	<ul style="list-style-type: none"> <li>• Facilitate the development of circular bio-economy value chains that convert waste, pollution, and GHG emissions into value-added products (food, feed and bio-based and bioenergy products)</li> <li>• Promote the use of renewable energy sources</li> <li>• Promote organic agriculture</li> <li>• Facilitate precision agriculture using digital technology solutions,</li> </ul>

	9	To maintain healthy soils and protect Croatian water resources	<ul style="list-style-type: none"> <li>• Support the adoption of best environmental management practices (such as crop rotations, conservation tillage, cover cropping, composting, and integrated pest and weed management) in conventional production systems</li> <li>• Promote circular/regenerative agriculture</li> <li>• Raise awareness among farmers regarding the importance of preservation of natural resources</li> <li>• Develop and integrate soil health and water quality data management systems</li> </ul>
	10	To promote growth and employment in lagging rural areas	<ul style="list-style-type: none"> <li>• Improve basic infrastructure/services and the broader business environment to attract increased private investments in rural areas</li> <li>• Provide tax incentives as well as technical and investment support to rural business entrepreneurs and start-ups</li> <li>• Facilitate investments in non-farm income diversification and value-added agri-food businesses</li> <li>• Build linkages with other growth sectors such as tourism, ICT, and biotechnology.</li> </ul>
	11	To promote interest in agri-food sector opportunities among Croatian youth	<ul style="list-style-type: none"> <li>• Promote agri-food sector opportunities, especially in new and dynamic business sectors (e.g., healthy foods and nutrition), through high schools and training centers.</li> <li>• Tax incentives to facilitate transfer of ownership from old to young farmers and encourage start-up young farmers</li> <li>• Increase incentives for digital and other “smart” technology solutions in agriculture</li> <li>• Launch campaigns to improve the image/reputation of agriculture and the rural “way of life” among youth</li> </ul>
	12	To improve the delivery of technical support and advisory services for agricultural producers and agribusiness SMEs	<ul style="list-style-type: none"> <li>• Support transition of public agricultural advisory services, as well as food safety, sanitary and phytosanitary services, to providing high-quality technical advice to farmers</li> <li>• Improve connections of research to on-farm delivery of information and technical support</li> <li>• Introduce private advisory services</li> <li>• Develop web-based agricultural knowledge and information exchange platform</li> </ul>
	13	To promote the productive use of private and state-owned agricultural land	<ul style="list-style-type: none"> <li>• Improve land registration and administration</li> <li>• Reform Agricultural Land Act to improve access to public land, ensuring that land is allocated to productive uses and to facilitate consolidation of small parcels.</li> </ul>

	14	To strengthen the development impacts of EU and national support programs for agriculture and rural development	<ul style="list-style-type: none"> <li>• Conduct public expenditure review analyzing/benchmarking the efficiency, effectiveness, and equity of current support programs</li> <li>• Redistribute and establish a cap on Pillar 1 subsidies with the aim to reduce major gaps between beneficiaries</li> <li>• Focus Pillar 2 subsidies on investments.</li> <li>• Tailor Pillar 1 and 2 eligibility criteria to target real producer needs.</li> </ul>
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2. For any of the eight (8) priorities you checked above, if you prefer solutions OTHER than those listed above, please indicate them here. *If you do not have any alternative suggestions, please leave this blank.*

NUMBER ABOVE	YOUR SUGGESTED RESPONSE OPTIONS

3. If there are other challenges – along with possible response options – that are not included above, that you believe are important in addressing the opportunities for Croatian agriculture, please indicate here:

NUMBER	ADDITIONAL CHALLENGES FACING CROATIAN AGRICULTURE	POSSIBLE RESPONSE OPTIONS
1		
2		
3		

4. Please indicate in which part of the agri-food sector you work (check (√) the one that represents the *major* focus of your work):

On-farm agricultural production  Food processing  
 Food distribution (wholesaling, retailing, logistics)  
 Producer organization or trade association  
 University / research organization / institute  
 Government  
 Consultant  
 Non-Governmental Organization or Local Action Group (LAG)  
 Other

5. Please indicate how many years of experience you have working in the agri-food sector:

Less than 5 years  
 Between 5 and 10 years  
 More than 10 year

6. Please indicate your gender:

Male  
 Female

7. Please indicate your age group:

Less than 40 years  
 Between 40 and 60 years  
 More than 60 years

8. Other comments:

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Thank you for participating in this survey!

## Appendix 2: Ministry of Agriculture Stakeholder Survey: Aquaculture

As part of its strategic planning process for the next EU budget period (2021-2027), the Ministry of Agriculture is soliciting input from stakeholders regarding prospects and opportunities for Croatian aquaculture under the next European Maritime and Fisheries Fund (EMFF). Your responses will support this process by helping us assess the critical issues affecting Croatian aquaculture today and the direction of future opportunities, including policy changes, where appropriate. Thank you very much for your input to this survey.

Please answer the following questions. Your answers will be kept confidential and will only be reported in aggregated format. The last question provides an opportunity for you to offer any additional comments you may have.

1. The columns below identify ten (10) critical “challenges” affecting Croatian aquaculture and examples of possible response options. **Please indicate with a check mark (√) in Column 1 the four (4) sets of challenges and possible response options** that you believe are *the most important* for Croatia and where the greatest potential lies for improving Croatian aquaculture. Please do not check more than four.

*Note: if you disagree with the examples of response options given, in Question #2, you may offer your own suggestions.*

TOP 4 PRIORITY? √ = YES	Nr	CHALLENGES FACING CROATIAN AQUACULTURE SECTOR	EXAMPLES OF POSSIBLE RESPONSE OPTIONS
	1	To raise overall productivity levels in the aquaculture sector	<ul style="list-style-type: none"> <li>• Modernize aquaculture production systems by adopting best management practices, technologies, and disease management measures in order to increase production efficiency</li> <li>• Evaluate feasibility of introduction of intensive monoculture (RAS) of high-value freshwater species that are now grown only in polyculture in carp ponds.</li> <li>• Evaluate expanding production to offshore locations (e.g. mussels) by using new technologies</li> <li>• Evaluate expanding of production of carp and trout in indoor aquaculture systems with new technologies</li> <li>• Diversify production around potential new commercial species</li> <li>• Assess possibility of diversification of activities (breeding, recreation, education, hospitality) in selected freshwater fish farms</li> </ul>



			<p>to enhance financial and environmental sustainability</p> <ul style="list-style-type: none"> <li>• Support investments that reduce unit production costs by increasing the scale of production</li> </ul>
	2	To improve linkages between small producers and processors to domestic and international markets	<ul style="list-style-type: none"> <li>• Strengthen and increase the number of producer organizations that will include producers and processors</li> <li>• Facilitate commercial partnerships between producers, processors, wholesalers, and retailers, especially in high value product segments (e.g. fresh, convenience, origin, and specialty products)</li> </ul>
	3	To develop new market opportunities in high- value product segments	<ul style="list-style-type: none"> <li>• Encourage the development of new marketing methods to increase the consumption of aquaculture products</li> <li>• Evaluate growth potential for higher-value domestic (tourism) and export markets, including “niche” markets, where higher prices are achievable</li> <li>• Secure quality and safety of aquaculture products</li> <li>• Assess potential for increased product differentiation, including through additional Protected Designation of Origin certifications Promote food destination tourism</li> </ul>
	4	To better coordinate marine- and land-based activities and infrastructure investments under the EU’s “Blue Economy” strategy	<ul style="list-style-type: none"> <li>• Enable aquaculture farmers to carry out other economic activities, for example tourism. The Law on Aquaculture and the Law on Tourism already make it possible for farmers to carry out different tourism activities</li> <li>• Improve regional and territorial development planning for islands and coastal areas, including improved marine spatial planning, data collection and analysis</li> </ul>
	5	Improve the system of disease control	<ul style="list-style-type: none"> <li>• At the national level, improve disease control systems, especially the introduction of disease through imported fish</li> <li>• Educate producers and encourage the development of biosecurity plans for each farm</li> <li>• Support prevention of disease and reduced drug use by stimulating the use of immunostimulants, probiotics, vaccines, resistance programs, etc.</li> <li>• Improve the well-being of cultured organisms</li> </ul>

	6	To better support producer compliance with the regulation of aquaculture in Croatian waters (environmental considerations, feed, antibiotics)	<ul style="list-style-type: none"> <li>• Develop, implement, and monitor comprehensive management plans for freshwater aquaculture, including conservation measures for target species and habitat types</li> <li>• Develop new mechanisms to address predation by seabirds on marine farms, including improved assessment and monitoring of species management, species alternatives, technological approaches, and repatriation to onshore farms when possible</li> </ul>
	7	To help the aquaculture sector adapt to increasing climate change impacts	<ul style="list-style-type: none"> <li>• Conduct risk analyses and develop sector-specific risk management plans and measures: ecosystem protection, insurance markets, improved water management, research on new species, etc.</li> <li>• Assess long-term prospects for climate warming impacts on growth rates</li> <li>• Support research on the introduction of technologies adapted to new climatic conditions</li> </ul>
	8	To attract more youth and skilled labor to the aquaculture sector	<ul style="list-style-type: none"> <li>• Promote sector opportunities through high schools, training centers, educational and outreach programs</li> <li>• Provide tax incentives to encourage young aquaculture producers</li> </ul>
	9	To provide better institutional support for innovation in the freshwater aquaculture sector	<ul style="list-style-type: none"> <li>• Assess the need to establish an Institute for Freshwater Aquaculture supporting experimental research, demonstration, and vocational training activities in the fresh aquaculture sector</li> <li>• Support innovation project partnerships between producers and researchers.</li> </ul>
	10	To achieve greater sustainability in aquaculture sectors	<ul style="list-style-type: none"> <li>• Investigate synergistic effects by combining aquaculture and other economic activities, e.g. biogas production from waste and waste water from aquaculture and processing</li> <li>• Facilitate the development of indoor recirculating (RAS) production systems and promote circular bioeconomy value chains (e.g. Integrated Multi-Trophic Aquaculture (IMTA)) that convert waste into value-added products</li> </ul>

2. For any of the four (4) priorities you checked above, if you prefer response options OTHER than those listed above, please indicate them here. *If you do not have any alternative suggestions, please leave this blank.*

NUMBER ABOVE	YOUR SUGGESTED RESPONSE OPTIONS

3. If there are other challenges – along with possible response options – that are not included above, that you believe are important in addressing the opportunities for Croatian aquaculture, please indicate here:

NUMBER	ADDITIONAL CHALLENGES FACING CROATIAN AQUACULTURE	POSSIBLE RESPONSE OPTIONS
1		
2		
3		

4. What specific changes, if any, would you like to see in the regulatory framework that regulates aquaculture in Croatia?

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5. What suggestions would you make for improving the system by which the views and opinions of aquaculture producers and other stakeholders are represented in policy and regulatory decisions?

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6. What measures do you think the Government could take to help increase sales, marketing and exports of Croatian fish and fish products?

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7. Please indicate in which part of the agri-food sector you work (check (✓) the one that represents the *major* focus of your work):

- Aquaculture production
- Fish/food processing
- Food distribution (wholesaling, retailing, logistics)
- Producer organization or trade association
- University / research organization / institute
- Government
- Consultant
- Non-Governmental Organization or Local Action Group (FLAG)
- Other

8. Please indicate how many years of experience you have working in the aquaculture sector:

Less than 5 years

Between 5 and 10 years

More than 10 year

9. Please indicate your gender:

Male

Female

10. Please indicate your age group:

Less than 40 years

Between 40 and 60 years

More than 60 years

11. Other comments:

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Thank you for participating in this survey!

### Appendix 3: Ministry of Agriculture Stakeholder Survey: Fisheries

As part of its strategic planning process for the next EU budget period (2021-2027), the Ministry of Agriculture is soliciting input from stakeholders regarding prospects and opportunities for Croatian fisheries under the next European Maritime and Fisheries Fund (EMFF). Your responses will support this process by helping us assess the critical challenges affecting Croatian fisheries today and the direction of future opportunities, including policy changes, where appropriate. Thank you very much for your input in to this survey.

Please answer the following questions. Your answers will be kept confidential and only reported in aggregated format. The last question provides an opportunity for you to offer any additional comments you may have.

- The columns below identify eight (8) “challenges” affecting Croatian fisheries and examples of *possible* response options. **Please indicate with a check mark (√) in Column 1 the four (4) sets of challenges and response options** that you believe are the *most important* for Croatia and where the greatest potential lies for improving Croatian fisheries. **Please do not check more than four.** *Note: if you disagree with the specific examples of response options given, in Question #2, you may offer your own suggestions.*

TOP 4 PRIORITY? √ = YES	Nr	CHALLENGES FACING CROATIAN FISHERIES SECTOR	EXAMPLES OF POSSIBLE RESPONSE OPTIONS
	1	To strengthen the coordination between marine- and land-based activities (e.g. tourism) and infrastructure investments (e.g. ports, landing sites, roads, markets, etc.) within the framework of a “blue economy” approach among national and local government stakeholders	<ul style="list-style-type: none"> <li>Invest in infrastructure at selected landing sites</li> <li>Promote coastal tourism that <i>complements</i> fisheries (e.g. local fish markets, nature-based assets, fisheries heritage and culture, etc.)</li> </ul>
	2	To optimize local revenues and jobs generated by existing capture fishery activities	<ul style="list-style-type: none"> <li>Diversification of products focusing to strategic market niche – development of products with value added, eco-certified products, products with focus on hospitality (catering, restaurants) at domestic and foreign markets</li> </ul>

	3	To strengthen producer organizations and associations of small producers	<ul style="list-style-type: none"> <li>• Strengthen and increase the number of producer organizations</li> <li>• Facilitate commercial partnerships between fishers, producer organizations, and food industry firms, especially in high-value product sectors</li> <li>• Support the adoption of international standards (e.g. Marine Stewardship Council, Organic, eco, etc.)</li> <li>• Support more market research, including the potential for domestic value-added production of selected species</li> </ul>
	4	To streamline the regulatory framework and improve support for producer compliance with regional and national species management plans and regulations	<ul style="list-style-type: none"> <li>• Improved assessment and monitoring of species management and economic impacts</li> <li>• Improve communication of fisheries management measures to stakeholders, including marketing sector and consumers</li> </ul>
	5	To raise overall productivity levels in the fisheries sector within established conservation boundaries	<ul style="list-style-type: none"> <li>• Improve/upgrade the existing fishing fleet, to improve fuel efficiency and safety measures, while avoiding the risks of overcapacity</li> <li>• Achieve greater economic impacts</li> </ul>
	6	To strengthen the adaptation of the fisheries sector to increasing impacts of climate change	<ul style="list-style-type: none"> <li>• Strengthen stock resilience through reduction in overfishing and enhanced management</li> <li>• Conduct risk analyses and develop sector-specific risk management plans and measures (e.g. ecosystem protection, insurance markets, vessel safety measures, research on species range, alien species and productivity shifts, etc.)</li> </ul>
	7	To attract more youth and skilled labor to the fisheries sector	<ul style="list-style-type: none"> <li>• Promote sector opportunities through high schools, training centers, educational and outreach programs</li> <li>• Promote tourism job opportunities linked to fisheries and fishery-based communities that attract youth</li> <li>• Provide tax incentives to encourage young producers</li> </ul>
	8	To strengthen institutional, technical and analytical capacity for enabling participatory and evidence-based fisheries resource management, policy design, and implementation at the regional and national level, (including for small-scale fishing operations)	<ul style="list-style-type: none"> <li>• Adopt or improve digital technologies for improved catch data collection (including for small-scale production)</li> <li>• Strengthen administrative capacity of the competent administration</li> <li>• Upgrading surveillance and control system</li> </ul>

For any of the four (4) priorities you checked above, if you prefer *response options* OTHER than those listed above, please indicate them here. *If you do not have any alternative suggestions, please leave this blank.*

NUMBER ABOVE	YOUR SUGGESTED RESPONSE OPTIONS

2. If there are other *challenges* – along with possible response options – that are not included above, that you believe are important in addressing the opportunities for Croatian fisheries, please indicate here:

NUMBER	ADDITIONAL CHALLENGES FACING CROATIAN FISHERIES	POSSIBLE RESPONSE OPTIONS
1		
2		
3		

3. What changes, if any, would you like to see in the regulatory framework that regulates fisheries in Croatia?

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4. What suggestions would you make for improving the system by which the views and opinions of fishermen and other stakeholders are represented in policy and regulatory decisions?

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5. What measures do you think the Government could take to help increase competitiveness of Croatian fish and fish products?

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6. Do you consider that the fleet should be modernized, in what sense and how much of your own means are you ready to invest?

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7. How do you think the value of national catches/production could be increased?

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8. Please indicate in which part of the agri-food sector you work (check (✓) the one that represents the *major* focus of your work):

\_\_\_\_\_ Fishery production

\_\_\_\_\_ Fish processing

\_\_\_\_\_ Distribution (wholesaling, retailing, logistics)

\_\_\_\_\_ Industry organization or trade association

\_\_\_\_\_ University / research organization / institute

\_\_\_\_\_ Administration

\_\_\_\_\_ Consultant

\_\_\_\_\_ Non-Governmental Organization or Local Action Group (FLAG)

\_\_\_\_\_ Other

9. Please indicate how many years of experience you have working in the fisheries sector:

\_\_\_\_\_ Less than 5 years

\_\_\_\_\_ Between 5 and 10 years

\_\_\_\_\_ More than 10 years

10. Please indicate your gender:

\_\_\_\_\_ Male

\_\_\_\_\_ Female

11. Please indicate your age group:

\_\_\_\_\_ Less than 40 years

\_\_\_\_\_ Between 40 and 60 years

\_\_\_\_\_ More than 60 years

12. Other comments:

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Thank you for participating in this survey!