

# Report on the assessment of the ICT system economic efficacy

WP4	<b>Pilot application and assessment of the econometric model for SP fisheries</b>
Activity 4.3	<b>Assessment of the ICT system environmental and economic efficacy</b>
D.4.3.3	<b>Report on the assessment of the ICT system economic efficacy</b>
Responsible PP	<b>PP3 – RERA</b>

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## Executive Summary

ITACA is a project co-financed by the Interreg V-A Italy-Croatia Programme 2014-2020 within the Priority Axis 1 (OT1) called "Blue Innovation", with the Specific Objective (OS1. 1) "to improve the conditions for innovation in the relevant sectors of the blue economy within the Program Area".

The Project - coordinated by Veneto Agricoltura, the Veneto Region's Agency for Innovation in the Primary Sector - has involved 6 organisations from Italy and Croatia:

- International Centre for Advanced Mediterranean Agronomic Studies - Mediterranean Agronomic Institute of Bari (Italy);
- Institute for Biological Resources and Marine Biotechnology of the Italian National Research Council (Italy);
- Public Institution Rera Sd for Coordination and Development of Split-Dalmatia County (Croatia);
- AZRRI – Agency for Rural Development of Istria Ltd. Pazin (Croatia);
- Confcooperative - Regional Union of the Veneto (Italy);
- Institute of Oceanography and Fisheries (Croatia).;

The goal of the ITACA project was to contribute to the growth of the SP fisheries sector setting up, testing in 7 pilot regions and fostering the large scale application of innovative SMEs oriented tools to increase the competitiveness of small pelagic fisheries. In particular, project partners set up a WebAPP (the ITACA WebAPP) oriented to the economic subjects (Organisations of Producers, Consortia, Associations and individual companies) operating in the fisheries of small pelagics in the Adriatic Sea in order to provide a useful tool to predict the most probable selling price in the market for ichthyic product of sardines - *Sardina pilchardus* and anchovies - *Engraulis encrasicolus*.

This Report is the result of a survey conducted on behalf of the Public Institution RERA SD for Coordination and Development of the Split-Dalmatia County for the economic assessment of the ICT system / ITACA WebAPP (hereinafter: the Application) within the end users of the Application, which aimed to ensure the digitalization of blue fish catch management in certain fishing zones of the Adriatic Sea, based on the bioeconometric model developed within the ITACA project.

The purpose of this Report is to describe the synergistic effects of the use of Applications, and thus the joint management of fishing activities in the Adriatic. The topics that are the focus of this report are: 1) improving the model of the usual management of fishing activities

of fishermen/operators and improving the planning of their medium-term fishing activities, thanks to the use of the bio-economic forecasting model on which the Application is based;

2) improvement of the economic and financial status of fishermen/operators, resulting from the use of the Application, which is able to provide data on the state of the fishery of the small pelagic fish and its market price.

The aim of this Report is an ex post general assessment of the usability of the Applications created within the framework of the ITACA project, with the aim of improving it in order to help end users, in this case fishermen/operators, in managing their fishing activities (Deliverable D.4.3.3.).

## 1. METHODOLOGY

The Report on the economic assessment of the ICT system built through the ITACA project is based on a survey in which fishermen/operators who were involved in the implementation activities of the ITACA project participated.

A total of 19 fishermen/operators participated, 13 of them from Italy and 6 from Croatia, who were proposed by the project partners to participate in the work and evaluation of the Application, as well as other project activities.

The survey was conducted through a Questionnaire created by the Public Institution RERA SD for Coordination and Development of the Split-Dalmatia County (Project Partner no. 3) in cooperation with Confocooperative (Project Partner no 5.) with the aim of examining end users, i.e. fishermen/operators about the functionality of the Application in an operational sense, but and the economic and market outcomes resulting from its use.

The document "ITACA bio-econometric model for the management of the small pelagic fishery in Adriatic" was used as an expert basis when formulating the questions intended for the economic assessment of the Application, which describes in detail the bio-econometric model on the basis of which the Application itself was created.

The Questionnaire consisted of 5 modules: 1) Evaluation of functionality; 2) Economic module; 3) Biological module; 4) Statistics; 5) Economic evaluation of ITACA WebAPP; 6) General assessment of participation in ITACA pilot activities.

The public institution RERA SD for coordination and development of the Split-Dalmatia County was responsible for the part of the Questionnaire that related to the economic features of the Application, therefore, within this Report, an overview of the research results is given, which is included in the part of the Questionnaire that refers primarily to the determination of economic features Applications (module 2 and 5), with the fact that the results of the part of the Questionnaire related to the *General evaluation of participation in the ITACA pilot activity* (module 6) were used in the part of the report related to the recommendations for the future activities of the fishermen's cluster established within the project ITACA.

## 2. CHARACTERISTICS OF ECONOMIC ANALYSIS

The economic evaluation of the Application was carried out in the framework of research based on a Questionnaire, in the preparation of which the document "ITACA bio-econometric model for the management of the small pelagic fishery in Adriatic" was used as an expert basis, with an emphasis on the part of the model that related to econometric elements.

### 2.1. ITACA BIO-ECONOMETRIC MODEL

According to the document "ITACA bio-econometric model for the management of the small pelagic fishery in Adriatic" the ITACA bio-econometric model was designed to support Italian and Croatian Producer Organizations in the daily management and monthly planning of their fishery effort, taking into account: 1) the potential revenue 2) the resource dynamics and 3) legislation constraints, in order to ensure the environmental and economic sustainability of the small pelagic fishery.

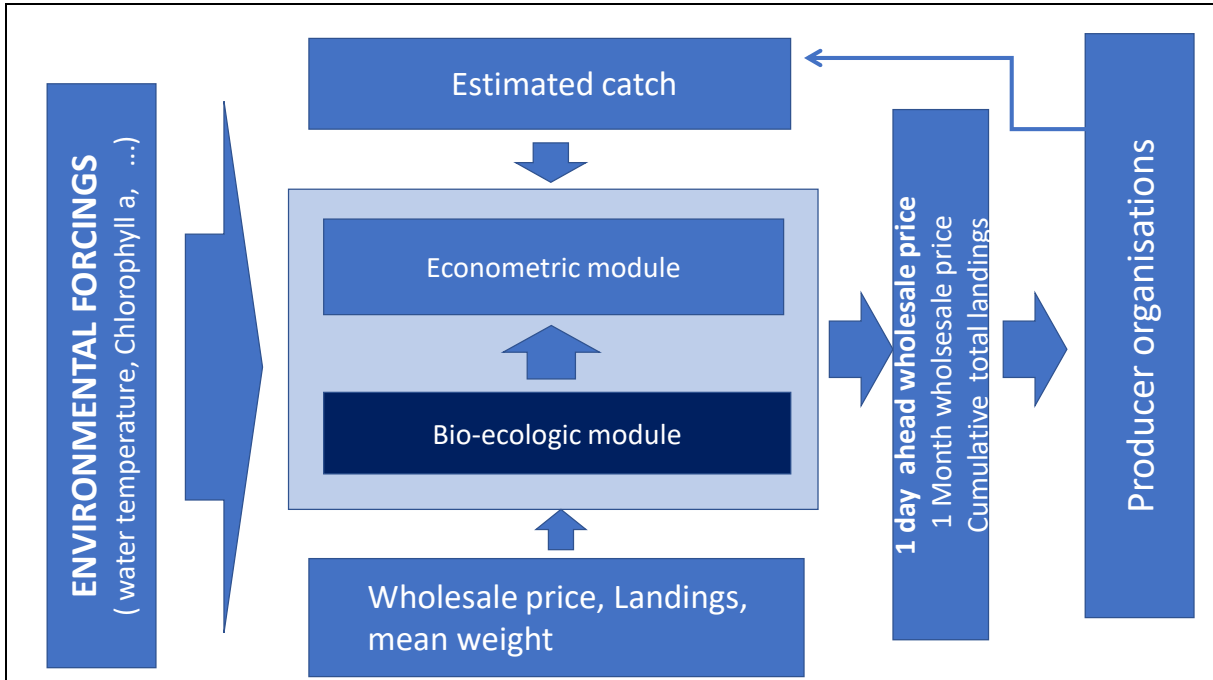
In order to achieve this goal, the model provided, for both target species, four dynamic, i.e. time dependent, main outputs:

- 1) 1 day ahead forecast of anchovies and sardine wholesale average daily price;
- 2) 1 month ahead forecast of anchovies and sardine wholesale average monthly price;
- 3) 1 month ahead forecast of anchovies and sardine average length and weight;
- 4) cumulative catches, updated on a monthly basis.

The structure of the bio-econometric model is shown in Fig.1.

As one can see, the model includes:

- 1) an econometric module;
- 2) a bio-ecological module.



**Fig. 1.** Overview of the ITACA bio-econometric model.

The econometric module provided the first two outputs: the which allows fishermen to get a preliminary estimation of potential short-term and mid-term revenues: these are obtained by multiplying the price forecast by the foreseeable daily and monthly catches.

The bio-ecological module gives the third output which, besides representing an input for the econometric module, allows one to understand how the environmental variables, see Fig. 1, are affecting the growth of small pelagic, but this Report hasn't evaluated the bio-ecological part of the model.

The importance of the fourth output was very relevant for monitoring, in real time, the compliance with fishery policies based on the Total Allowable Catches or proxies of this indicator, which can be seen as overall constraints for limiting catches/effort.

A very important assumption for the functionality of the model was a role played by the main model end-users, i.e. producer association/fisherman who should input real time estimates of future catches, in order to get estimates of the wholesale price.

Preliminary results of the evaluation of the econometric module that was tested on the selected Adriatic fish marketplaces (that was presented in the document), shown some irregularities regarding the difference of data collected by monthly and daily module regarding the reliability of market prices. The preliminary results shown that the daily module is much more effective and accurate than the monthly one.

## 2.2. WEBAPP ITACA- APPLICATION FUNCTIONALITIES DESCRIPTION

The inputs from the document "ITACA bio-econometric model for the management of the small pelagic fishery in Adriatic" were used in the design of the WebApp Itaca Application. Therefore, the Application offered different modules: 1) Economic module; 2) Bio- ecological module; 3) My statistics.

*Economic module* was designed to track market data and perform predictive simulations on the next month's catch thanks to algorithms based on historical data. *Bio-ecological module* allowed the average size of the fish caught to be plotted and compared with the average estimated in the different fishing areas. *My statistics* module allows to view, in graphical form, the trend in catches in relation to the average price for the last month or the last six months, both for anchovies and sardines.

Since this Report is focused to the economic evaluation of the Application, the description of the functionalities of the „Economic module“ are the following.

The fish operators when accessing the economic module for the first time, needed to specify the market data input mode. All Croatian operators needed to specify the monthly mode and Italian operators needed to specify the daily mode.

Once the configuration was completed, the users were be able to consult the history of the market data of the anchovy and sardine fishery in their area, through calendar navigation.





By clicking on the appropriate button "Update market data", it was enabled to update the data related to the revenues and the quantity of fish caught, for the selected reference week.

The operation was enabled to carry out separately for anchovies and sardines, specifying the monthly total catch. After entering the data, operators were enabled to run a simulation to get an estimate of the catch and the cost of fish for the current month or the following month.

Very important module from the economy point of view was "My statistics" module since it allow operators to view, in graphical form, the trend in catches in relation to the average price for the last month or the last six months, for both anchovies and sardines, based on the data entered in the economic module.

### **3. ECONOMIC EVALUATION OF THE ITACA WEBAPP /APPLICATION**

The purpose of this research was to determine whether the Application, or the bio econometric model on which the Application was based on, truly provides end users with information about the significance for their better planning of fishing activities and other factors of the intended Application.

Taking into account all the elements of the bio-econometric model presented in the document "ITACA bio-econometric model for the management of the small pelagic fishery in Adriatic", a Questionnaire dedicated to the Economic module was precisely tailored in order to certain conclusions could be drawn about the functionality of the Application and the model itself and possible recommendations for their improvement in the future period.

Below is an overview of the Questionnaire designed for the economic evaluation that was integrated into the overall Application evaluation Questionnaire.

#### **3.1. ITACA- QUESTIONNAIRE FOR FISHERMEN / USERS OF ITACA ICT SYSTEM (ECONOMIC MODULE)**

The purpose of the ITACA WebAPP / ICT system (hereinafter: Application) is to ensure the digitization of blue fish catch management (sardines and anchovies) using the bio-econometric model developed within the ITACA project.

The purpose of this questionnaire is to examine the end users / fishermen of the application in order to collect data on the functionality of the system in operational terms, but also economic and market outcomes arising from the use of the Application, in order to report on the usability of the Application.

**1. Does the application enable adequate forecasting of the selling price of fish (anchovies and sardines), ie is it useful from the aspect of better planning of fishing catch on a daily / monthly basis?**

i) Yes, the selling price offered by the application is a good basis for planning fishing on a daily / monthly basis.

ii) No, it is not possible to plan fishing on a daily / monthly basis based on the selling price offered by the application.

**2. Does the application provide information on the basis of which you can improve the management of your fishing activities - relevant information on market prices, monitoring catch statistics in relation to market prices, simulation of catches / market prices ...?**

i) Yes, the app provides information based on which we can improve the management of our fishing activities.

ii) No, the application provides information that is not relevant to improving the management of our fishing activities.

**3.** Are the data you enter on a daily / monthly basis in the application useful / relevant to you in the context of monitoring catch progress?

i) Yes, the data we enter is useful for tracking the progress of our catches.

ii) No, the data we enter should be more accurate and up-to-date to monitor the progress of our catches.

**4.** Should the application or the bio-econometric model on which the application is based be improved, ie do you think that additional data should be entered into the application in order to provide more comprehensive information that is important for better management of fishing activities?

i) Yes, it is necessary to improve the application with additional data (eg fuel cost, age of fishing vessels, possession of specialized tools and equipment, ..).

ii) No. It is enough to enter the data required by the application.

**5.** Should the application include more end-users / fishermen / fishing zones to enter data on fish catches (sardines and anchovies) in the application?

i) Yes

ii) No

**6.** Would you recommend using the application as a useful tool for managing economic activities of fisheries to other users / fishermen?

i) Yes

ii) No

#### 4. RESULTS OF THE ECONOMIC EVALUATION

19 fish operators in total participated in the survey by providing their responds to the Questionnaire and the results of research focused on economic evaluation of the Application are the following.

Questionnaire was made in the Google form (in Croatian, Italian and English language) so the operators participated in the survey on line.

The Questionnaires were available at the following link:

English language: <https://forms.gle/nnUuu2A3LQSGnaDV9>

Italian language: <https://forms.gle/m55wKzfuH9X5pdET6>

Croatian language: <https://forms.gle/XoBF7Z2C2pKZdbbC9>

Results of the survey are presented in graphical form with the legend in Italian and Croatian language since the operators provided their answers in the Questionnaires on their native language, but the interpretation of the results is provided in English.

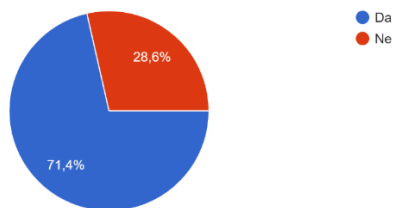
Economic evaluation of the Application was divided into two modules in the Questionnaire: 2) Economic module and 5) Economic evaluation of ITACA WebAPP.

Except interpretation of those two modules, the module 4) Statistics is also included into the analyses due to the fact that the results from that module are also important from an economic point of view, as well as the part of the Questionnaire related to the *General evaluation of participation in the ITACA pilot activity* (module 6) which was used in the part of the report as a base for the recommendations of the future activities of the fishermen's cluster established within the project ITACA.

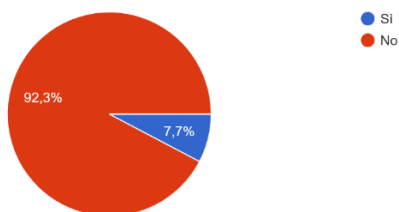
#### 4.1. ECONOMIC MODULE

Croatian operators who answered that other data could be collected within the framework of the economic model highlighted the price of fuel as useful information, while Italian operators indicated quantitative data on fishing areas.

Smatrate li da bi se u okviru ekonomskog modula mogli prikupljati i drugi podaci?  
7 odgovora

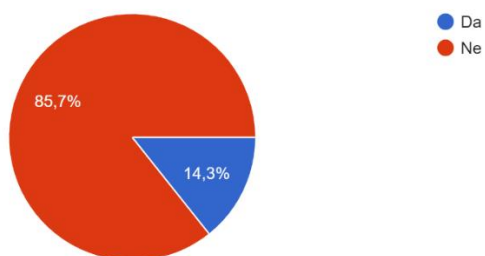


Ritiene che possano essere raccolti ulteriori dati rispetto a quelli previsti?  
13 odgovora

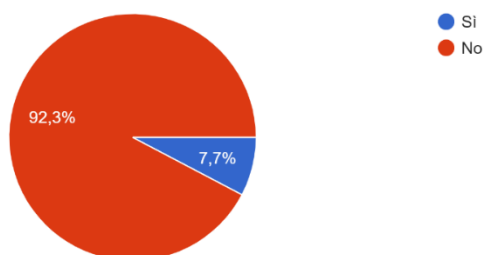


When entering data into the part of the application related to the Economic Module, the operators mostly pointed out that they had no problems, while a small part of them pointed out that they had technical problems when entering data into the application.

Što se tiče ekonomskog modula, jeste li naišli na poteškoće u učitavanju podataka?  
7 odgovora



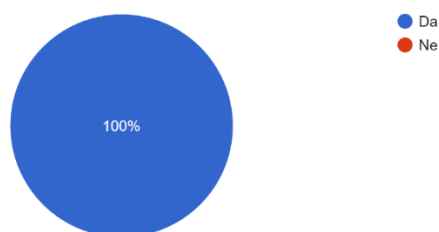
Rispetto al modulo economico, ha trovato difficoltà nell'inserimento dei dati richiesti?  
13 odgovora



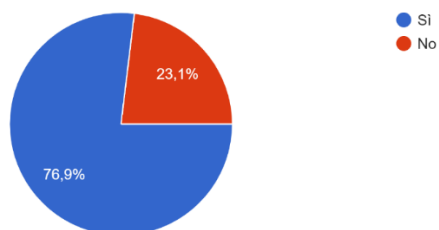
## 4.2. STATISTICS

Croatian operators are satisfied with the settings based on which the application provides statistical data, while Italian operators expressed the need for this part of the application to be modified in such a way as to provide more statistical data monitoring intervals and insight into data from previous years.

Mislite li da su opcije prikaza statistike u zadanom intervalu (zadnjih šest mjeseci i prošli mjesec) korisne?  
7 odgovora



Ritiene che le opzioni per la visualizzazione dei dati (ultimo semestre e ultimo mese), sia pertinenti per la consultazione dei dati inseriti?  
13 odgovora



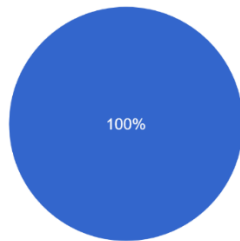
In response to the question "What other functions do you propose to include in the statistics section?", the Croatian operators proposed to include the price of fuel, and the Italian operators proposed to introduce the amount of catch per individual fishing area, additional catches and the frequency of exploitation of the fishing area.



### 4.3. ECONOMIC EVALUATION OF ITACA WEBAPP

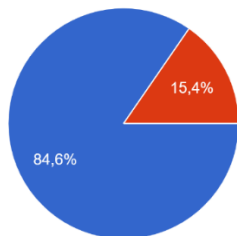
All Croatian operators believe that the application adequately predicts the selling price of fish (anchovies and sardines) and consider it useful in terms of better planning of fishing catches on a daily/monthly basis, while 15.4% of Italian partners disagree.

Omogućuje li aplikacija adekvatno predviđanje prodajne cijene ribe (inćuna i srdele), odnosno je li korisna s aspekta kvalitetnijeg planiranja ribolovnog ulova na dnevnoj/mjesečnoj bazi?  
7 odgovora



- Da, prodajna cijena koju nudi aplikacija dobra je osnova za planiranje ribolovnog ulova na dnevnoj/mjesečnoj bazi.
- Ne, nije moguće planirati ribolovni ulov na dnevnoj/mjesečnoj bazi na temelju prodajne cijene koju nudi aplikacija.

A suo avviso, l'ITACA WebAPP dà la possibilità di effettuare previsioni adeguate sul prezzo di vendita del prodotto (per acciughe e sardine), ovvero...l'attività di prelievo su base settimanale/mensile?  
13 odgovora

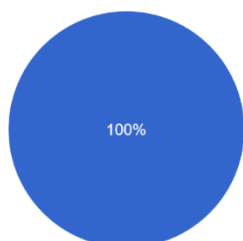


- Sì, il prezzo previsto indicato è una buona base per pianificare l'attività di prelievo
- No, non è possibile pianificare l'attività di prelievo attraverso la WebAPP

Also, to the question "Does the application provide information on the basis of which you can improve the management of your fishing activities - relevant information on market prices, monitoring of catch statistics in relation to market prices, simulation of catches/market prices?", Croatian operators answered 100% in the affirmative, while 15.4% of Italian partners answered in the negative.

Pružila li aplikacija informacije na temelju kojih možete poboljšati upravljanje svoje ribolovnim aktivnostima – relevantne informacije o tržišnim cijene...a tržišne cijene, simulaciju ulova/tržišnih cijena..?

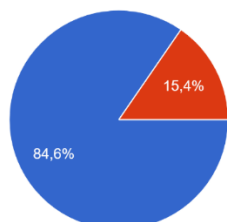
7 odgovora



- Da, aplikacija pruža informacije na temelju kojih možemo poboljšati upravljanje našim ribolovnim aktivnostima.
- Ne, aplikacija pruža informacije koje nisu relevantne za poboljšanje upravljanja našim ribolovnim aktivnostima.

L'ITACA WebAPP fornisce sufficienti informazioni per migliorare la gestione delle sue attività di pesca, ovvero fornisce importanti indicazioni sui pre... delle catture, simulazioni dei prezzi valide, ecc.?

13 odgovora

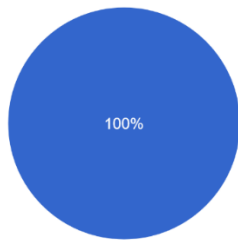


- Si, fornisce sufficienti indicazioni su cui basare l'attività di pesca
- No, fornisce indicazioni che non sono rilevanti per l'attività di pesca

7.7% of Italian operators believe that the data they enter into the application should be more precise and updated in order to be able to monitor the progress of their catch, while 92.3% of Italian and 100% of Croatian operators believe that the data they enter into the application is useful in the context monitoring the progress of the catch.

Jesu li podaci koje unosite na dnevnoj/mjesečnoj bazi u aplikaciju korisni/relevantni za Vas u kontekstu praćenja napretka ulova?

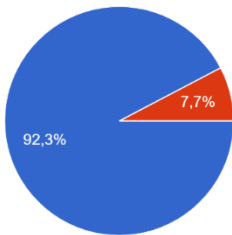
7 odgovora



- Da, podaci koje unosimo korisni su za praćenje napretka našeg ulova.
- Ne, podaci koje unosimo trebali bi biti precizniji i ažurirani kako bismo pratili napredak našeg ulova.

L'inserimento dei dati di catture e prezzo per settimana/mese, è rilevante per avere sul lungo termine informazioni utili per tracciare l'andamento dei prelievi e dei prezzi?

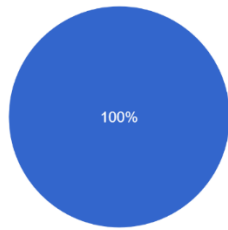
13 odgovora



- Si i dati inseriti riescono a dare informazioni importanti sul lungo termine
- No, i dati inseriti dovrebbero essere più di dettaglio per avere informazioni importanti

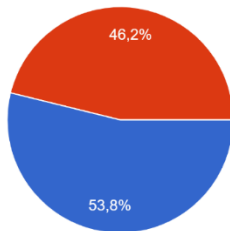
46.2% of the Italian operators believe that it is necessary to improve the application with additional data (e.g. fuel cost, age of fishing boats, possession of specialized tools and equipment,...), while 53.8% of Italian operators and 100% of Croatian operators are satisfied with the existing level data provided by the Application.

Treba li poboljšati aplikaciju ili bio- ekonometrijski model na kojem se aplikacija temelji, odnosno, smatrate li da bi trebali u aplikaciju unositi dodatn... za kvalitetnije upravljanje ribolovnim aktivnostima?  
7 odgovora



- Da, potrebno je unaprijediti aplikaciju dodatnim podacima (npr. trošak goriva, starost ribarskih brodova, posjedovanje specijaliziranih alata i opreme,...).
- Ne. Dovoljan je unos podataka koje traži aplikacija.

A suo avviso, potrebbe il modello bio-econometrico di ITACA e l'ITACA WebAPP essere migliorato con l'introduzione di nuovi dati?  
13 odgovora

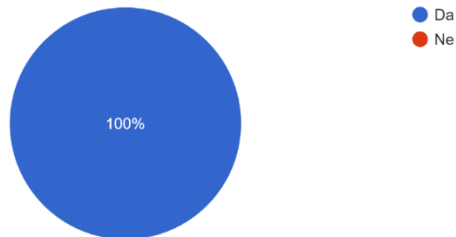


- Si, è necessario implementare ulteriormente il modello e la WebAPP di ITACA
- No, i dati inseriti sono sufficienti

All the Croatian operators would like the scope of the application to be extended to more end users/fishermen/fishing zones, while 46.2% of Italian operators do not want it.

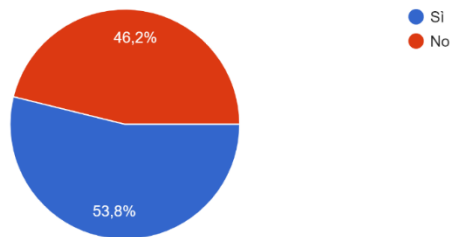
Treba li aplikacija uključiti više krajnjih korisnika/ribara/ribolovnih zona za unos podataka o ulovu ribe (srdele i inćuna) u aplikaciju?

7 odgovora



A suo avviso, dovrebbe il modello bio-econometrico di ITACA e l'ITACA WebAPP includere anche altre zone di pesca?

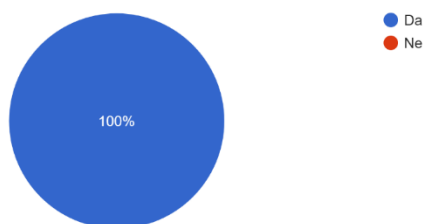
13 odgovora



7.7% of the total number of (Croatian and Italian) respondents would not recommend using the application as a useful tool for managing economic activities to other users/fishermen.

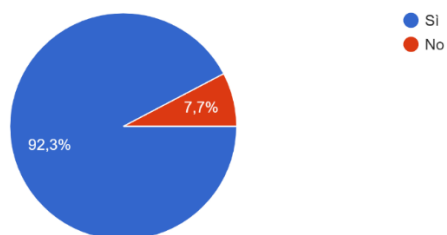
Biste li preporučili korištenje aplikacije kao korisnog alata za upravljanje ekonomskim aktivnostima ribarstva drugim korisnicima/ribarima?

7 odgovora



Consiglierebbe l'uso dell'ITACA WebAPP a colleghi e/o altri operatori?

13 odgovora



#### 4.4. GENERAL EVALUATION OF PARTICIPATION IN THE ITACA PILOT ACTIVITY

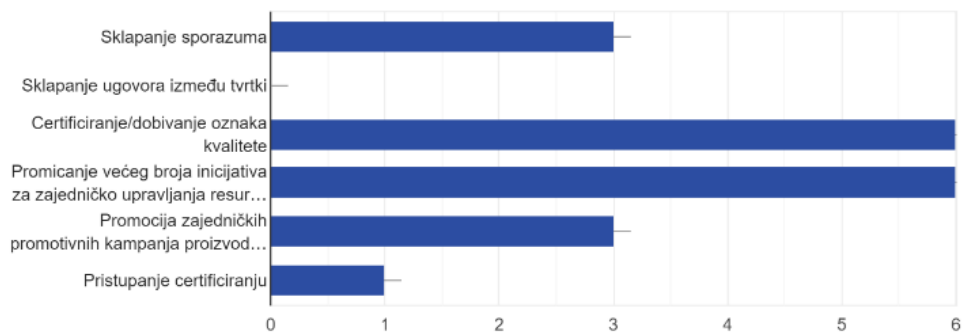
In the context of the survey related to the *General evaluation of participation in the ITACA pilot activity (module 6)*, which is important in the context of the further use of applications by the cluster established in the ITACA project, all the respondents spoke positively about encouraging cooperation and sharing experiences in the management of fish resources as would ensure the maintenance and improvement of the Adriatic pelagic fish stock, and they rated their participation in the ITACA project as useful.

Regarding the answer to the question "Do you think that the ITACA WebAPP is a tool that can be easily combined with fishing activities and that really contributes to the joint management of resources?", the majority of respondents answered that it is confirmed, however, some respondents answered that they use applications on on a daily basis causes additional effort and that its use is not easy for everyday use, while one respondent highlighted its importance in the context of monitoring the state of pelagic fish at a strategic level.

The answers on the most important question for a future cooperation: „What other tools can improve and make the functioning of the ITACA cluster more efficient in the future, in order to be more competitive“, evaluation of which it is possible to determine guidelines for future action is shown on the graph:

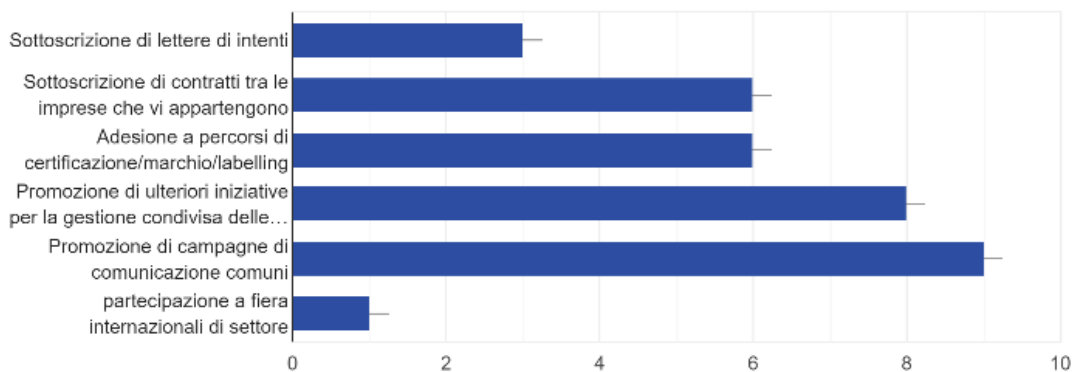
Koji drugi alati mogu poboljšati i učiniti učinkovitijim funkcioniranje ITACA klastera u budućnosti, kako bi ga učinili konkurentnijim?

7 odgovora



Quali strumenti possono supportare e rendere più efficace e competitivo il Cluster di ITACA?

13 odgovora





## 5. CONCLUSION & RECOMMENDATIONS

Based on the results of the survey of the economic evaluation of Application made by its end users- fisherman operators the following conclusions/recommendations for the economic management of the cluster can be made and modalities can be proposed to initiate members of cluster to continue using the Application after the end of the project.

Recommendation for Application improvement:

- new data should be included: the price of the fuel, quantitative data on fishing areas, amount of catch per individual fishing area, additional catches and the frequency of exploitation of the fishing area, age of fishing boats, possession of specialized tools and equipment;
- more statistical data monitoring intervals and insight into data from previous years;
- improvement of data of the selling price
- improvement of data regarding the relevant information on market prices of small pelagic fish (anchovies and sardines), monitoring of catch statistics in relation to market prices, simulation of catches/market prices in terms of better planning of fishing catches on a daily/monthly basis;
- scope of the Application to be extended to more end users/fishermen/fishing zones;

The above mentioned recommendations should lead to the improvement of the Application in order to become a useful tool for managing economic activities to its users/fishermen in complete.

According to the evaluation of the part of the survey related to the general evaluation of the Application, the results showed that majority of participating fish operators considered their participation in ITACA pilot project activity highly positive and they expressed their wish for further cooperation.

Furthermore, the following activities are proposed to be implemented that could lead to the improvement of cluster activities in the future:

- signature of light agreements;
- signature of economic agreement among companies;
- adhesion to certification/acknowledgement paths;
- promotion of more initiatives to share the management of resources;
- promotion of common promotional campaigns of the small pelagic fish product.

The results of this report show that the Application proved to be a useful tool in planning fishing activities, but it needs to be improved with new data to make it even more useful and attractive for its further use in the future.

Therefore, the signature of *Memorandum of Understanding* that includes:

- the regular utilisation of the tools developed within the ITACA Project, with specific reference to the ITACA WebAPP, to pave the way for a more market-oriented management of catches and a more competitive positioning of the small pelagic fisheries enterprises in the fish products market;
- the promotion of an open dialogue supporting a shared management of small pelagic catches and resources, also through the adoption of shared practices based on data exchange and tools oriented to promote the environmental sustainability of the fisheries;
- the factual sharing of best practices, competences, data and ICT solutions to support the mutual learning and overcome the weak coordination and circulation of knowledge among all stakeholders, both institutional and economic, at cross-border level;
- the organisation of joint training and awareness raising initiatives to improve performance and actions aimed at strengthening environmental sustainability of small pelagic fisheries in Adriatic;
- the joint participation in co-financed projects to continue cross-border cooperation in the field of economic and environmental sustainability of small pelagic fisheries in Adriatic

is of extreme importance for the future work of the cluster, since it gives an opportunity to further improve the planning of fishing activities of Croatian and Italian fishermen, which will lead to the improvement of the economic performance of their companies, but also better monitoring of the biological characteristics of small pelagic fish, which is of exceptional importance for the planning of fishing activities in the Adriatic Sea.

## QUESTIONNAIRE

### EVALUATION OF THE ITACA WebAPP

The purpose of the ITACA WebAPP is to ensure the digitization of blue fish catch management (sardines and anchovies) using the bio-econometric model developed within the ITACA project.

The purpose of this questionnaire is to examine the end users / fishermen of the ITACA WebAPP in order to collect data on the functionality of the system in operational terms, but also economic and market outcomes arising from the use of the application, in order to report on the usability of the ITACA WebAPP.

Email \*

Name \*

Surname \*

Organization \*

#### *1- EVALUATION OF FUNCTIONALITIES*

5. Did you use the ITACA WebAPP regularly? \*

Yes, on a weekly basis

Yes, on a monthly basis

No, I just had a look on it

6. Which functionalities of the ITACA WebAPP do you use regularly? \*

the economic module

the biological module

the statistics section

7. Please, provide a general opinion on the usability of the ITACA WebAPP, by replying to the following single question (where 0 is not at all and 5 is completely yes) \*

The utilisation of ITACA WebAPP is intuitive

The utilisation of ITACA WebAPP is fast

The utilisation of the ITACA WebAPP is easy

The utilisation of ITACA WebAPP is intuitive

The utilisation of ITACA WebAPP is fast

The utilisation of the ITACA WebAPP is easy

## *2- ECONOMIC MODULE*

8. With regards to the economic module, did you find any difficulties in uploading data? \*

Yes

No

9. If yes, which ones?

10. Do you think that other data could be collected within the economic module? \*

Yes

No

11. If yes, which ones?

## *3- BIOLOGICAL MODULE*

12. With regards to the biological module, did you find any difficulties in uploading data? \*

Yes

No

13. If yes, which ones?

14. Do you think that other data could be collected within the biological module? \*

Yes

No

15. If yes, which ones?

#### *4- STATISTICS SECTION*

16. Do you think that the options (last six month and last month) in the timing for the visualisation of statistics are convenient? \*

Yes

No

17. If no, which period/s, do you suggest?

18. Which other functionalities in the statistics section do you suggest to include?

#### *5- ECONOMIC EVALUATION OF ITACA WEBAPP*

**19.** Does the application enable adequate forecasting of the selling price of fish (anchovies and sardines), ie is it useful from the aspect of better planning of fishing catch on a daily / monthly basis?

i) Yes, the selling price offered by the application is a good basis for planning fishing on a daily / monthly basis.

ii) No, it is not possible to plan fishing on a daily / monthly basis based on the selling price offered by the application.

**20.** Does the application provide information on the basis of which you can improve the management of your fishing activities - relevant information on market prices, monitoring catch statistics in relation to market prices, simulation of catches / market prices ...?

i) Yes, the app provides information based on which we can improve the management of our fishing activities.

ii) No, the application provides information that is not relevant to improving the management of our fishing activities.

**21.** Are the data you enter on a daily / monthly basis in the application useful / relevant to you in the context of monitoring catch progress?

i) Yes, the data we enter is useful for tracking the progress of our catches.

ii) No, the data we enter should be more accurate and up-to-date to monitor the progress of our catches.

**22.** Should the application or the bio-econometric model on which the application is based be improved, ie do you think that additional data should be entered into the application in order to provide more comprehensive information that is important for better management of fishing activities?

i) Yes, it is necessary to improve the application with additional data (eg fuel cost, age of fishing vessels, possession of specialized tools and equipment, ..).

ii) No. It is enough to enter the data required by the application.

**23.** Should the application include more end-users / fishermen / fishing zones to enter data on fish catches (sardines and anchovies) in the application?

i) Yes

ii) No

**24.** Would you recommend using the application as a useful tool for managing economic activities of fisheries to other users / fishermen?

i) Yes

ii) No

#### *6- GENERAL EVALUATION ON THE PARTICIPATION TO ITACA PILOT ACTION*

The ITACA project sought to bring together the small pelagic fisheries operators of almost all Adriatic fishing areas and promoted the use of new ICT tools to launch a shared management small pelagic resources.

The WebAPP and the ITACA Cluster are tools that work at a pilot level and that certainly require further improvements to effectively allow and support a shared management of catch activities in the Adriatic.

**25.** In your opinion, is it important to encourage collaboration and shared good practice in the management of ichthyic resources to ensure the maintenance and improvement of Adriatic stocks of small pelagic? What has been your experience in ITACA?

**26.** Do you think that the ITACA WebAPP is a tool that can be easily combined with fishing activities and truly support a shared management of resources?

27. Do you believe that the cluster of companies, for which the ITACA project has laid the establishment, can have winning features to position itself on the market?

28. Which other tools can support and make more effective the ITACA Cluster functioning in future also making it more competitive? \*

Signature of light agreements

Signature of economic agreement among companies

Adhesion to certification/acknowledgement paths

Promotion of more initiatives to share the management of resources

Promotion of common promotional campaigns of the small pelagic fish product

other