

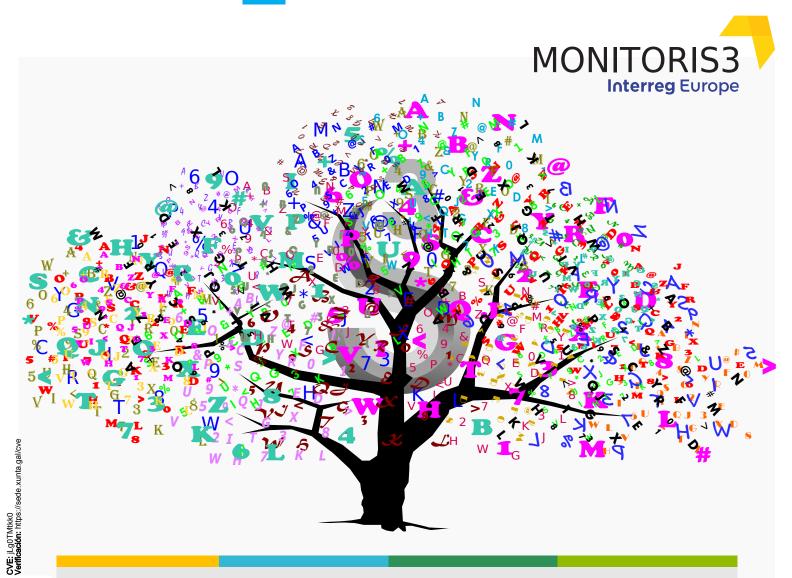


Action Plan for Galicia

January 2020







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Part I – General information

Project: MONITORIS 3

Partner organisation: AXENCIA GALEGA DE INNOVACIÓN (GAIN)

Other partner organisations involved (if relevant): n/a

Country: SPAIN

NUTS2 region: GALICIA (ES11)

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Part II – Policy context

The Action Plan aims to impact: X Investment for Growth and Jobs programme

☐ European Territorial Cooperation programme

X Other regional development policy instrument

Name of the policy instrument addressed: OPERATIONAL PROGRAMME ERDF GALICIA 2014-20202: MEASURES FOR STRATEGIC PUBLIC-PRIVATE PROJECTS

The MONITORIS3 project aims to improve the implementation and monitoring process of Smart Specialization Strategies. In the case of Galicia , the aim of the policy instrument addressed is (are) "MEASURES FOR STRATEGIC PUBLIC-PRIVATE PROJECTS".

Within the broad scope of this PI, three (3) specific measures were taken into consideration:

- 1. **Mixed centres,** specifically addressed to finance equipment from private entities within these "mixed centres" or units, needed to enhance their international leadership and facilitate the catching-up with most advance regions in Europe.
- 2. **Innovative public procurement support actions**, to develop projects in the field of innovative public procurement as a way to promote a demand-led instrument which may be used to foster intensive research and innovation and, at the same time, the provision of innovative public services.
- 3. Support and improve the singular research centres of the Galician University system: this instrument compels singular research centres aimed to increase the capacity and impact of the research activity within the knowledge-value-innovation value chain and generating scientific, social and economic impact.

At the heart of two of these three policy instruments relies the Strategic Objective (SO) 1.2.1 of the Operational Programme Galicia 2014-2020 (funded by ERDF). The aim of SO 1.2.1 is "the promotion of R&D activities lead by companies; the support for the creation and consolidation of innovative companies; and the support for innovative public procurement". Under Strategic Objective 1.2.1, ERDF (Feder Galicia 2014-2020) will focus on supporting policy instruments that will help private companies to invest in innovation initiatives, but also in policy instruments aimed at fostering public-private collaboration.

The rationale behind this priority is the <u>need to support business innovation</u>, designing a strategy aimed at coming up with a more innovative production structure that will be able to develop and offer the market products and services of greater added value. The point of departure to set up this strategy stems from the ex ante evaluation of Galicia ERDF OP 2014 -2020. During the period 2011-2016, Galicia business expenditure on R & D was reduced (-6.2%) more than the Spanish average (-3,.7%). Still, the decrease was smaller than in the rest of the Spanish "convergence regions".

Moreover, since 2013 business expenditure on R & D in Galicia has experienced a growth of 11.2% above the three autonomous communities with greater R&D effort in 2016: Madrid



(+2.4%), Catalonia (6.2%) and the Basque country (-1.7%).

As for private innovation, the number of companies that carried out innovation activities in Galicia has dropped -27,.5% between 2011 and 2016; however, the turnover of new products or improved products over the total billing increased by 7.4 percentual points during the same period, above the Spanish average (+4.6%) and ahead of communities like Catalonia (+5.2%), Basque country (-0.2%) and Navarra (-7.3%).

Galician Regional Government has a solid commitment with the promotion of private investment of R+D+ I, giving support to SME innovation plans and public-private collaborative projects by means of launching and implementing grants and calls aimed at reinforce the effort that SME are making to "catch-up" with major innovation territories.

The expected change is to increase (even more) research and innovation in the private / business sector, with the aim of being a territory that maximize the potential of innovation to guarantee the competitiveness of economy and capacity of the Galician society to respond to global transformations.

The role of GAIN-Axencia Galega de Innovación.

Since 2012, GAIN becomes responsible for supporting the boost innovation in Galician companies and promote innovation policies within the Galician public administrations. ,a responsibility that leads to articulate a regional strategy in the field of R + D + I and build up an innovation

GAIN responds to a systemic vision of innovation, that establishes linsks among public agents of innovation (other agencies and regional ministries), but putting a special emphasis in the links between public support for innovation and privation innovation initiatives.

This is the context where GAIN develop its role, highlighting the need of boosting and supporting private initiatives of innovation with SMEs.

As stated lines above, this priority is aligned with ERDF Specific objective 1.2.1. ERDF. However, there are other policy instruments that are no being financed by ERDF and are equally aligned with the priority of "R&D activities led by companies".

Updating of sub-instruments within SO 1.2.1. (SO 1.2.1. ERDF OP Galicia 2014-2020)

Besides the three above-mentioned sub-policy instruments, GAIN is implementing other sub-policy instruments that seek to foster private investment in R & D, as well as public-private R& D collaboration schemes based upon the open innovation philosophy. The overall goal is still the one stated as SO 1.2.1 of Galicia ERDF OP 2014 2020: the promotion of R&D activities lead by companies, and the support for the creation and consolidation of innovative companies.

On the one hand, the so-called INNOVA PEME instrument was launched in 2017. It was implemented through a call for grants to SME for financing the costs of the activities integrated in innovation plans, which allow them to systematize the innovation processes of the company that are aligned with the priorities established in RIS 3 for Galicia.

Since 2017, GAIN has mobilized 7,482,288 € for InnovaPeme, and has benefited 86 companies. It has been funded through ERDF, SO 1.2.1.

On the other hand, DIGITAL INNOVATION HUBS (DIH) is a program aimed at giving support to any company that needs to have access to innovative digital technologies, and how to finance /generate the investments needed for its digital transformation. Considering the progress of the "RIS3 Galicia", our region is committed to a more collaborative innovation model, being the dynamization of the digital innovation hubs (DIH), the main instrument for its development.

Digital Innovation Hubs are designed as a single virtual /physical portal for entrepreneurs seeking for access (expertise | financing) to digital innovation, this expertise being provided by the start up and agents in the ecosystem system of Galicia.

Therefore, we must consider DIH as a policy outcome of Galician RIS3. This policy instrument is the consequence of an entrepreneurial discovery process that resulted in the need coming up with new models of open collaboration and innovation among players of the Galicia innovation ecosystem. Open innovation instruments were foreseen in Galician RIS3, and DIH's play the role providing digitalization support to challenge sectors of Galician RIS3 (innovative management of natural and cultural resources- challenge 1-, new industrial model based on competitiveness and knowledge -Challenge 2-, new healthy lifestyle model based on active ageing of population -Challenge 3-).

This model is defined in a coherent and coordinated manner with the guidelines on digitalization and intelligent specialization of the European Commission. The hubs allow grouping, cohesion and specialization of the agents of the R & D & I ecosystem in the strategic areas for Galicia, in accordance with RIS3, through the generation of open, intelligent and agile public-private collaboration dynamics. They are functional support structures that allow more efficient alignment of knowledge with the needs of the business network and markets, making it easier for the industry, especially SMEs, to access different innovation services that allow an adequate integration of emerging technologies into their business strategy.

So far, GAIN is planning to give financial support to two sectoral DIH's which has been recognized as strategic from the Regional Government: the Biotech DIH, and the Manufacturing DIH.. The programme for Digital Innovation Hubs in Galicia will initially run for two years, with the objective of facilitating the cohesion and specialization of the RDI ecosystem in strategic areas in Galicia, according to RIS3, through a dynamic, open, smart, and agile public-private collaboration. DIH's will soon develop technological services (through a voucher system) for galician companies that are expected to be financed through ERDF funds

We are proposing these sub-instruments as the cornerstone of our Action Plan for a twofold reason:

- 1. These sub-instruments are also a crucial part of the instruments implemented to foster private-public cooperation in research, development and innovation. Moreover, they seem more clearly focused on fostering RDI in SME than any other instrument actually implemented by GAIN.
- 2. On the other hand, most of the Good practices implemented by the rest of partners involve SME, and the learning process obtained in Phase 1 has been clearly focused on the monitoring of PI fostering SME innovation, and SME- public collaboration.

How does SO 1.2.1 of Galicia ERDF OP 2014-2020 correlate with Galicia RIS3? How is this Action Plan going to contribute to improve the OP?

These two policy instruments contribute both to the accomplishment of SO 1.2.1 of our Galicia ERDF OP 2014-2020, and to the goals of our RIS3.. The connection between them (Galicia ERDF OP 2014-2020 and RIS) is twofold: programmatic and budgetary.

- From a programmatic perspective, one of the Guiding principles of the Galician RIS3 is to stimulate private investment in RDI. Therefore, Axis 3 of RIS3 foresaw an array of PI seeking to reinforce the capacity for knowledge absorption by SME. Among them, we can quote Innova Peme. DIH's is also the specific development of one of the mechanisms drafted in our RIS3. It answers to the need of promoting open innovation institutional arrangements, with the same goal: promoting the development of RDI activities and horizontal RDI strategies of collaboration resulting in an increase of the innovation activities developed by SME.
- From a budget perspective, Galicia RIS3 was expected to mobilize 1,624 million €, 678 mill € coming from Structural funds (41,75%). As per the two PI included in this action plan, Innova Peme is being funded by ERDF, whereas DIH's formal establishment activities will be funded by GAIN own funds. GAIN foresees a call for launching RDI services provided by DIH's, which will be funded by ERDF.

Both instruments will contribute to improve both the achievement of SO 1.2.1, because the results stemming from both actions will help to give feedback to Galician public authorities on the performance of both instruments.

- ⇒ In the specific case of Action 1 (Monitoring SME attitudes towards innovation), if the results driven by the action are proven to be useful, cost-effective and reliable. the instrument might be introduced in the monitoring process of SO 1.2.1 through the monitoring of RIS3. Moreover, the action plan will allow us to determine if the public investment made in fostering private investment in R+D+I is giving the expected results, and, if so, if it is worthy to reinforce this public support to R+D+I private projects.
- ⇒ In the case of DIH's, the sub-instrument is completely new, and we are establishing the path for monitoring its results, helping therefore to contribute to the results of So 1.2.1 ("the promotion of R&D activities lead by companies; the support for the creation and consolidation of innovative companies"). This brand-new monitoring process will help Galicia authorities to determine if DIH are achieving its results. Once again, it will help us to determine if increasing efforts should be made to financially support more DIH.

DETAILS OF ACTIONS ENVISAGED

ACTION 1. MONITORING BEHAVIOURAL CHANGES **TOWARDS OF** INNOVATION IN GALICIAN SMEs

The background

As we have already explained, the support of RDI activities led by companies is a priority identified by the Galicia ERDF OP 2014-2020, and GAIN has a crucial role in developing appropriate policy instruments to achieve the goals identified for this priority, which was also a cornerstone of the Galicia Research and Innovation Plan 2013 (the so-called I2C) and it is also a pillar of Galicia Innova 2020.

On the other hand, RIS3 Galicia 2014-2020 emphasizes that almost 60% of the RDI planned instruments have a very high or high mobilization capacity for private investment. In fact, within the framework of the RIS3 Galicia Strategy, it was expected to achieve private investments equal to 50% of the 936 million € to be invested through Structural funds and other sources of EU investment, which means a total private investment of 468 M€ in the period 2014-2020.

Galicia has just developed its RIS3 mid term evaluation. The aim of this mid-term evaluation is to determine the extent to which RIS3 objectives are being met. The monitoring system is based upon a set of indicators (aligned with ERDF objectives) which are continuously monitored. In fact, the evaluation of the Galicia Smart Specialization Strategy is an integral part of the "Specific Evaluation Plan of the O.P Galicia". This is mainly because the implementation of the RIS3 Galicia 2014-2020 has been supported with ERDF, particularly through the ERDF Operational Programme Galicia.

This Evaluation System has been designed along with the definition of the Smart Specialization Strategy for Galicia, and it is currently under its Interim Evaluation.

Galicia RIS3 monitoring system includes as the only qualitative indicator, the degree of satisfaction from the Galician Innovation ecosystem in terms of the RIS3 implementation. This has been monitored for the first time prior the interim evaluation in early 2019. On the other hand, one of the conclusions of the interim evaluation of RIS3 Galicia was that more consistent qualitative indicators are needed. This suggestion stems precisely from stakeholders involved in the mid-term evaluation, the reason being that traditional measures of innovation (Such as RDI investment and patents) are fine in order to assess the innovation that mostly occurs in large manufacturing firms, but are of limited value when the innovation actions relies upon services, business models, and entrepreneurial start-ups. This will be very relevant for Galicia since a 99% of the companies are small and medium enterprises.

In this sense, during several meetings in the framework of MONITORIS3 it was highlighted that the essence of monitoring and evaluating the policy instruments is to pursue transformative changes, which are rather behavioural changes (translated into actions and decisions) taken by actors, that could be "predictors" of a company innovative profile. This was also mentioned during the workshop organized by the PLP on 25th September in Brussels on "Better Design, Monitoring and Evaluation of RIS3".

Real understanding of innovation requires a deep dive into what goes on within organizations. It has to take into account how risks are assessed, decisions are made and implemented, and how the rocky roads of internal politics and organizational battles over resources are navigated. In a nutshell, it requires to understand managerial attitudes towards innovation. Managerial attitudes towards innovation can be a driving or a blocking force in the commitment of SME with innovation initiatives, But, so far, we have no reliable data on the hypothetical impact of public support for innovation on the attitudinal change of managers towards private investment on RDI.

Therefore, the aim of this action (which reflects the requested Pilot Action) is the collection of data on Innovation attitudes in SME. For doing so, the sample used will be the beneficiaries of the Innova Peme programme (call 2020). We will try to gather data in an experimental group (The beneficiaries of the call) VS a control group (companies that applied for funds, but were not successful in their applications). This will allow us to determine the effect of innovation governmental support on managerial innovation attitudes vis-à-vis innovation attitudes in those companies that have not benefited from governmental support.

The testing character of this Pilot Action mainly stems from the fact that all instruments addressing the industry and implemented by GAIN target SMEs, since they have a strategic role in the Galicia smart specialization development. These instruments aim to help improve their competitiveness and also to stimulate both private investment on RDI and private-public collaboration.

However, the measure of attitudinal changes towards innovation will be first tested in a small sample (INNOVAPEME beneficiaries), which accounts for 15% of all companies that benefit for public support of GAIN within a year.

There are some other features that reinforce the testing character of this Pilot Action:

- ⇒ For the first time, the Galicia regional Government is testing the measurement of innovation attitudes towards innovation in two different groups: those SME that are being benefited from public support, vs those companies that, in spite of applying for RDI support in a public tender process, did not receive this support.
- ⇒ Likewise, the Galician regional Government will be testing the measurement of innovation attitudes towards innovation in different beneficiaries groups, classified according to their level of innovation maturity.
- ⇒ Ability to scale up the results: the text of the call for proposals and mechanism of InnovaPeme 2020 will be modified in order to include the need of beneficiaries to actively participate in actions aimed to assess changes towards innovation in their organizations and staff. This new element will be maintained on future calls of InnovaPeme. Depending on the results of the pilot experience (proved usefulness, cost-effectiveness and reliability), the newly tested monitoring system will be presented to the S3 Galicia Governing Council in order to be introduced in the S3 monitoring system.

The results of the pilot action will provide information on the effect the specific policy instrument is having on Galician SMEs and, in combination with the current quantitative indicators, should also provide comprehensive information on the innovation profile and projections inside SMEs. This will help implement the necessary measures to improve the efficiency of the instrument and achieve the aimed results. For Galicia, this is very relevant since one of the weaknesses detected thanks to the Entrepreneurial Discovery Process of the interim Evaluation of the S3 is the weak incorporation of small companies into the innovation system, especially newly established small companies.

Our source of inspiration

During the 7th Interregional Thematic Seminar organized from 13th to 14th March 2019 in the framework of MONITORIS3 in Timisoara (Romania), the Norland County Council brought up an idea of how to introduce qualitative indicators into the monitoring systems of instruments targeting small and medium enterprises in the framework of RIS3 evaluation.

During this meeting, the Norland County Council drew attention to the importance of taking into account behavioural changes in companies after their participation in public funding projects, in order to assess the effectiveness of the public instruments. This will contribute to show hidden information on innovation investments in the companies that quantitative indicators are not able to show.

Norland County Council commented on previous experiences in Norway on implementing monitoring schemes based on surveys and interviews to companies in order to measure the behavioural additionality from the public investment, specifically the SkatteFUNN.

SkatteFUNN -Norway is a general R&D tax incentive implemented in 2002 in Norway. The objective was to broadly stimulate R&D projects in the private sector, especially smaller projects. About half of the beneficiaries are firms with less than 10 employees and more than 80 per cent are firms with less than 50 employees.

The project should also generate new knowledge, skills and capabilities within the beneficiary companies. To monitor this additional effect, Research Council in Norway set up an evaluation scheme based on, among other information, documenting internal and behavioural changes within the companies through surveys and interviews with the companies which served to evaluate the effect of the public instrument.

The Norland County Council will take part of this pilot action by transferring their experience to Galician region and advising in every step of its implementation.

Also, the fact of including as the control group the non beneficiaries of the Innova Peme was inspired in the GP presented by CCDR-N (Portugal) on "Counterfactual Evaluation: Impact of European Structural and Investment Funds on Firm Performance". This GP was first informally discussed in the ITS celebrated at Padova last June 2019, and was finally presented by CCDR-N in the ITS held at Porto last October 3rd 2019. Whereas our approach is not based upon the application of an econometric model (ex-post counterfactual analysis), it inspired us to make the selection between "supported" and "unsupported" firms. Moreover, in our case we will no make an ex-post data collection, but rather an ongoing data collection while the programme is implemented, differentiating between our experimental group (the "supported companies") and control group ("unsupported firms").

Action

Actions will be listed and explained by semester, as follows.

1. Setting Up Field Research (January 2020-March 2020)

InnovaPeme instrument is administered by competitive calls for proposals and a new call will be launched in the first three months of 2020. GAIN has already started working on the modification of the text of the call for its adaptation in this pilot action in order to include the new monitoring issue. Therefore, the delivery of questionnaires will be introduced in the call as an obligation for beneficiaries which will then receive the questionnaire together with the notification of their project approval. The call of Innovapeme will also include the obligation of implementing the same survey at the end of the project together with the delivery of the final report.

A meeting with the Department of Services of GAIN, which is in charge of the management of InnovaPeme, was organized in order to discuss and assess how to better introduce this criteria in the call, trying to make also the application process to the call as simplest as possible in order to avoid unnecessary administrative burden to companies.

As a result of the meeting, a proposed amended text for the call was submitted to the Treasury Department of Galicia which is the responsible body for R.O.P Galicia.

Before publishing the call for proposal in the official bulletin of the region, the Department of Treasury will need to approve the text of the call including the need of delivering questionnaires for measuring innovation attitudes.

The main expected outputs are:

- Meeting between Department of Services of GAIN and the team responsible for the Pilot Action
- Ammended text of InnovaPeme 2020 call including the need of delivering questionnaires for measuring innovation attitudes approved by the Department of Treasury
- Ammended text of InnovaPeme 2020 call including the need of delivering questionnaires for measuring innovation attitudes published in the regional Official Bulletin

2. Field Work (February 2020 – May 2020)

Questionnaires to participants to InnovaPeme will be developed. Surveys implemented in Norland Region will be used as a source of inspiration as well as external sources, for instance, the OCDE Guidelines. A benchmarking on other regions using qualitative indicators for the assessment of behavioural changes will be done and will serve also as source of inspiration.

The target group for developing the pilot action are applicants and beneficiaries to InnovaPeme 2020. For those, R & D maturity will be determined by using "Innobench".

"Innobench" is an individual and personalized innovation benchmarking report for the measurement of the innovative performance of Galician companies, in which companies can know their competitive position with regard to other companies that develop a similar activity, as well as their potential for improvement and how to achieve it in aspects as relevant as: financial effort, financing, capacities (human capital, cooperation ...), product and marketing, ICT process and technologies, organization, sales, labour productivity and overall efficiency. This report must be completed by all applicants during the submission of their proposal.

Therefore, Innobench gives a "snapshot" image of a company's stage of innovation maturity. In this sense, Innobech will be a very useful tool in this Pilot Action, as it allow us to make a twofold comparison:

- ⇒ Firstly, it will allow us to divide our sample (both beneficiaries and applicants) in "most similar groups", according to their degree of technological maturity. We might hypothesize that attitudes toward innovation vary according to the company's technological maturity. And this starting point will allow us to compare inter-group differences at the beginning of the process (i.e., when they are applying for the programme)
- ⇒ The comparison between the initial "Innobench groups" allows to get information on the extent to which the participation in Innovapeme has caused one of the following effects:
 - It has caused similar variations in innovation attitudes within companies with similar degrees of innovation maturity.

 It has caused significant different effects in groups of SME with different degrees of technological maturity.

Summarizing, we will be using Innobench to classify companies in most similar groups, in order to test intragroup and intergroup attitudinal changes towards innovation.

At the beginning of this semester, a workshop will be organized for the design of the questionnaires and the field work in which Norland County Council will participate in order to transfer their know how and their experience implementing their similar action.

The Department of Treasury in Galicia will be invited to participate in the workshop as the body responsible for the O.P. and also the Agency for Economic Development in Galicia (IGAPE) since they are also together with GAIN responsible for the implementation of the SO 1.2.1.

In the case the Pilot Actions proposed by GAIN and the CCDR-N are both approved and as long as they are dealing the same issue, the travel of the advisory partner (Norland County Council) could be used for their assistance to the meeting in Galicia and also the one in Porto.

The main expected outputs are:

- Workshop organized
- Surveys designed and ready to submit to SMEs

3. Administration of Questionnaires and analysis of results (June 2020 – February 20212020).

Beneficiaries of InnovaPeme will be individually contacted in order to inform them about MONITORIS3 Project and about this Pilot Action in which they are been involved. A meeting(s) will be organized if requested from beneficiaries in order to be better informed and assessed.

3.1. Administration and compilation of 1st round of questionnaires (October 2020- November 2020)

A first round of Questionnaires (developed during the previous semester) will be distributed to participants to InnovaPeme 2020. Whereas participation in the questionnaire will be mandatory for all the beneficiaries (our experimental group), the participation of applicants (control group) will be conducted under a voluntary scheme. This will happen at the very beginning of the Innova Peme programme. The aim of administering the questionnaire in this first round is to have information on attitudes towards innovation at "Time 0", i.e., before the companies might have benefited from the public support.

Questionnaires should be able to capture information in dimensions such as:

- SME propensity to apply for RDI public support.
- Importance of RDI actions within the company.
- Integration of RDI actions within SME annual plans.
- Integration of RDI in daily operations.
- SME propensity to carry out self-funded RDI actions
- SME propensity to collaborate with R&D institutions.
- SME propensity to recruit trained researchers /technicians.

Moreover, Innobench results should allow us to divide respondents according to their R&D maturity. Therefore, we might be able to compare answers within "most-similar" groups.

Follow up of responses and assistance to companies for the completion of the surveys will be made available

3.2. Analysis of 1st round of results (September 2020 – October 2020)

Once the information has been collected, GAIN will analyse the results, producing reports for both groups (beneficiaries /non beneficiaries), and also analysing results for the identified sub-groups, according to their level of innovation maturity and in relation to all the dimensions described above.

3.3. Administration of 2nd round of questionnaires (October 2020- November 2020).

Several after the programme starts, a second round of Questionnaires will be distributed to participants and applicants to InnovaPeme 2020 will be distributed. The aim is collecting the same kind of information, so that we can compare "T(0) Vs T(8/9)" evolution. Having the results of these 2 waves, we might be able to estimate "behavioural additionality".

3.4. Analysis of 2nd round of results. Comparison of changes (December2020 – February 2021). The results for this 2nd round of questionnaires will be analysed according to the same variables that 1st round, i.e:

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- a. The already pointed out dimensions (propensity to apply for RDI public support, Importance of RDI actions within the company... and so on).
- b. Differentiating the results among beneficiaries Vs non-beneficiaries.
- c. Differentiating the results among beneficiaries' sub-groups, according to their initial level of innovation maturity.

Furthermore, in this second round we will be able to determine if there is any behavioural change that might have been produced due to the participation of our "experimental group" in the INNOVAPEME programme. In this case, we will also compare T(0) Vs T(8/9) results. Conclusions will be extracted on whether InnovaPeme is having an effect in the behavioural changes within Galician SME (behavioural additionality).

The results obtained will also allow us to compare the companies' scores on innovation quantitative indicators for these companies, allowing us to determine the extent to which a change on innovation attitudes is also followed by a change in quantitative innovation scores.

Norland County Council as advisory partner will be advising on how to treat the data collected from the questionnaires submitted in the two rounds.

The main expected outputs are:

- -60 questionnaires submitted by SMEs during the 2 rounds.
- - 2 reports analysing results on attitudes towards innovation, 1 for each round.

4. Transferring results to the Policy Instrument (March 2021- June 2021)

The final report of the assessment and evaluation of the pilot action should include conclusions on whether the monitoring actions developed prove to be successful or not. In the case the testing of the pilot action proved to be successful (it was cost-effective and it produced reliable information), the report will recommend to include the qualitative dimension into the monitoring of the RIS3 and hence into the monitoring of the S.O.1.2.1

In case the reliability and effectiveness of the pilot action is proven, the following actions will be taken in order to ensure the transfer of the results of this pilot action into the policy instrument addressed by the MONITORIS3 Project:

- 1. A meeting with the RIS3 management team will be organized. The S3 Galicia management team, is the responsible for the operative implementation of the Strategy on a daily basis. This role is taken by the <u>Department of Programmes of GAIN</u>, the same which is leading the <u>MONITORIS3 project and part of the policy instrument approached by the pilot action</u> described in this proposal. The aim of the meeting will be the approval of the introduction of the qualitative indicator of measuring behavioural changes towards innovation into the monitoring of the RIS3.
- 2. The S3 Galicia Management Team will submit the report with the conclusions and recommendations to the S3 Galicia Governing Council. This is the body responsible for the global application of the Strategy, transversally representing the Regional Administration, thereby guaranteeing the transversal and coordinated orientation of innovation policies at a regional level. The Governing Council is responsible for approving any proposed corrective actions aimed to improve the strategy. This council is formed by:
 - The Regional Minister for Economy and Industry in the Xunta de Galicia
 - · The Director of GAIN
 - One representative from each department of the Xunta de Galicia (including the Department of Treasury, which is the MA for the ROP in Galicia)
 - · One representative from the Agency for Technological Modernization
 - One representative from the Galician Universities Council
- 3. Adoption of the report with the approval of the new indicator in one of the meetings of the S3 Galicia Governing Council. This means that this new monitoring approach will be incorporated in the monitoring system of the Galicia RIS3 after its adoption.

The evaluation of RIS3 (both the interim evaluation (2019) and the final evaluation (2022) are one of the 9 evaluations to be developed under the "Specific Plan for the Evaluation of the ROP 2014-2020". RIS3 Galicia is a multi-fund strategy, being the ERDF the main funds.

4. The final evaluation of the RIS3 Galicia 2014-2020 will be done in 2022 in which, after approval by the S3 Galicia Governing Council, the results from the pilot action will be incorporated and the new qualitative dimension will be included as part of the monitoring system for the RIS3. Final evaluation of

R.O.P Galicia is automatically incorporating the RIS final evaluation since, as was already explained, this is an integral part of it.

The main <u>expected outputs</u> are:

Report with conclusions and recommendations from the Pilot.

Validated monitoring system after testing (by both, the S3 Galicia Management Team and the RIS3 Governing Council, of which the ROP Galicia MA is a member).

Incorporated results of the pilot action in the final evaluation process for RIS3 Galicia, which will be then part of the ROP final evaluation.

Proposed policy improvement presented (the tested monitoring system) at the ERDF-Implementation Task Force semester meeting. The Task Force is responsible to monitor the ERDF implementation, and the semester meetings serve to review the OP requests for modification, and approve or disapprove them. It is participated by representatives of Spanish Treasury and all the Galician departments implementing the ERDF OPs

Players involved

The following players will be involved:

- a. GAIN, department of Services: it is the department in charge of implementing and managing Innova Peme. There is already an agreement with this department to develop this action, and the department of Programmes (responsible for he implementation of MONITORIS3) will implement the whole process.
- b. Departments from the Galicia Government: The Department of Treasury in Galicia as the body responsible for the O.P. and also the Agency for Economic Development in Galicia (IGAPE) since they are also together with GAIN responsible for the implementation of the SO 1.2.1.
- c. SME's beneficiaries of Innova Peme: the completion of the above-mentioned questionnaires for measuring attitudes towards innovation will be done by beneficiaries of this public initiative, so we expect a high rate of responses and little resistance to collaborate. We expect little obstacles in the process of data collection.
- d. SME's non-beneficiaries, but applicants of Innova Peme: we might expect some resistance in the data collection process. However, the experience tells us that Galician SME's are collaborative when it comes to improve a policy instrument. This has happened in the RIS3 evaluation process, and we might expect their collaboration, as these companies ae inclined to make use of public instruments of support for RDI.
- e. External experts: external experts and /or universities will support and inform the development of the questionnaire.
- Advisory partner. Norland County Council is also expected to support the design and implementation of this action.

The action will be developed from January 2020 to June 30th 2021.

Costs (if relevant)

The cost of this action will be up to 43.500 €, according to the following distribution per cost heading:

Staff costs	Office and administration	Travel and accommodation	External expertise and services	Equipment	Net revenues	Total pilot action budget
30.000,00€	4.500 €		9.000,00€	- €	- €	43.500 €

Funding sources (if relevant):

The Funding source stem from the Pilot Action of the Interreg Europe Programme.



ACTION 2. MONITORING DIGITAL INNOVATION HUBS The background

In April 2016, the European Commission launched the European Industrial Digitization Initiative as part of the Digital Single Market Strategy. Its objective is to enhance the digitalization of the European economy to unlock the full potential of the fourth industrial revolution and strengthen the competitiveness of the European Union. Taking advantage of and complementing the various national initiatives launched to digitize the industry, the actions of this initiative are structured around five main pillars. One of these pillars is focused on digital innovation hubs as a tool to ensure that digital innovations reach all companies, especially SMEs, through the support of a solid network of DIH to ensure that all companies in Europe can take advantage of the digital opportunities.

DIH's are aimed to respond to unfulfilled needs perceived by the Commission, but also by SME, mainly:

- The Return on Investment in digital innovations is difficult to assess upfront.
- SME's have problems with trusting the technology
- Are not sure about the maturity of latest technologies (Big data, AI, robotics,..).
- In all, they need to "test and experiment before engaging in digital innovation"

In this context, it is necessary for the Administration to articulate and promote, in collaboration with all key stakeholders, new models of open innovation, able to interconnect the innovation system, while encouraging transformation to improve the impact, effectiveness and efficiency of public R & D & i policies on SME's.

Digital Innovation Hubs in Galicia.

A Digital Innovation Hub is a virtual and / or physic 'one-stop shop' through which any company (SME) can access to the support needed to understand digital technologies, and also obtain support on how to finance / generate the investments needed for its digital transformation.

The core element of a Digital Innovation Hub is the competence center. The specific function of a Hub is act as a connector. The competence center is, normally, a 'hard' technical infrastructure", while the hub is a 'soft' infrastructure providing service to companies.

There are some specific functions that a DIH is expected to evolve, which are closely related to its objectives. We have summarized them in the following figure:

There are some specific functions that a DIH is expected to evolve, which are closely related to its objectives. We have summarized them in the following figure:

		Objetives	Activities
	1	Create an innovation ecosystem	Seminars, visits, conferences, speeches
services	2	DIH Strategy development	Forecast analysis; business analysis
	3	Disseminate and awareness-raising	Bulletins, lobbying, publications
Ecosystem	4	Train and qualify: building an ecosystem learning process	Training & Education; webinars
Eco	5	Promotion & Lobbying	National and International meetings and conferences, Roadshows, Trade missions
ervices	6	Market evaluation: identify new technologies for driving-force companies	Feasibility analysis; intellectual property valuation.
sal se	7	Develop disruptive knowledge	R+D+i projects & consultancy
Technological services	8	Contribute to R+D+i infrastructure & internal services	Access to Infrastructures for prototyping, demonstration & validation
Tech	9	Product evaluation	Product Business development
S	10	Brokerage	Innovation sessions, access to digital markets, access to fund raising
services	11	Boosting digital capacities	Setting up of a marketplace
	12	Support: business incubators accelerators	Voice of customer; market analysis; IP property rights; market strategies
Business	13	Competencies development & Training	Training courses; workshops, tech infrastructure; international & national exchanges

CVE: jLg0TMtkk0
Verificación: https://sede.xunta.gal/cve

The technological services will constitute the "core" of the catalogue; they will be services related to the technology transfer that will involve activities that allow access to the state of the art (renting, labs...) prototype, research and development... The technological services will be focused on the first links in the innovation chain (idea, proof of concept, piloting, start-up business ...) Normally these technological services will be provided by the DIH competence centre. But to generate impact, DIH must offer business services. These services will focus on the latest links in the innovation chain, from the start-up business to its introduction in the market. Services related to capacity development and training, which in recent years have gained much importance, are very interesting. And finally, DIH must offer services related to the ecosystem, such as strategic development, training of ecosystem agents, building "community"...The combination of these three types of services is necessary to offer a complete catalogue that allows SMEs to accompany their digital transformation and generate a sustainable business model for DIH.

What seems crucial for DIH is to combine the three types of services mentioned, but the catalogue of services must be developed together with the hub and adapted to its moment of maturity. In the life of a hub, we can identify five stages, preparation, stabilization, growth and renewal to be able to adapt to the new demands of the market or otherwise, the disappearance of the hub.

The hub usually begins offering services related to the ecosystem, and technological services are offered as the DIH grows, including services such as incubation or acceleration, while services related to the ecosystem tend to disappear.

The selection process of Strategic DIH was driven through an open call, the aim being to select and support the creation of DIH aligned with RIS3 priorities. As a result, 2 strategic DIH are being recognized:

- ⇒ The Biotechnology DIH (Aligned with Challenge 1 and 3 of our RIS3)
- ⇒ The manufacturing DIH (aligned with Challenge 2 of our RIS3).

According the to call for the selection of Strategic DIH, the selected DIH should be oriented towards (at least) two value chains. They are intended to facilitate digital innovation in SME, bringing also the support of driving-force companies and integration of start-ups. The main efforts should be focused on the ability to accelerate the adoption of key technologies for the Galicia industry that have a slow level of penetration.

A special emphasis is given to a **bottom-up model of governance** (at odds with the Spanish administrative style), so that DIH are always serving the needs and inspiring the digitalization process of its clients, i.e: SME.

DIH are actually financed through Galician Government funds, at least at its first stage. However, it is expected that they might raise funds for self-financing. The selected projects will receive the support of the Galicia Regional Government through 2 mechanisms: 1) on the one hand, in an economic support of 150,000 year / hub, to subsidize the necessary preparatory actions; 2) and on the other, in a contribution in kind consisting of the tutoring /mentoring by a specialized consulting company.

To formalize this aid, GAIN and the selected HUBS will sign up signing of a multi-annual Contribution Agreement (€ 150,000 year / hub). With this aid, the Hubs will finance its "formal establishment" by completing the following tasks:

- Completion of Viability Plan
- 2. Business Plan.
- 3. Governance agreement
- 4. Setting up of a Catalogue of Services
- 5. Implementation of 2 pilot user experiences, through 2 calls administered by the Hubs, and funded by Galicia ERDF OP 2014-202 funds:
 - A system of bonuses that will help SME to have access to digital innovation services offered by other HUBs' member
 - A competitive call for consortium projects within the HUB, and base upon a cascade funding scheme (similar to a FSTP).

As DIH are starting to operate in Galicia, it seems a great opportunity to **establish the basis for a DIH monitoring system**. Taking into account that 1) Digitalization of SME are at the core of DIH mission, 2) DIH have clear objectives, that are aimed to give place to very specific actions; and 3) DIH management is based upon a bottom-up governance system, Galicia DIH monitoring system should rely on the following principles:

1. It should be agreed through "Terms Of Reference", agreed with the DIH task force (Galician Administrations and their promotors) and their end users (SME's). They will point out which crucial



variables of the implementation of DIH should be monitored in order to determine if DIH are giving an effective response to SME digitalization needs, and if DIH are responding to their initial objectives. An special emphasis should be given to the monitorization of:

⇒ The business Plan, and all the ecosystem services that both DIH should build up at their

- ⇒ The business Plan, and all the ecosystem services that both DIH should build up at their seminal stages.
- ⇒ The responsiveness of the services catalogue to SME digitalization needs.
- ⇒ The nature of governance mechanism, that should be driven by a bottom-up style.
- 2. The monitoring system should also include quantitative indicators, coherent with those that are measuring public-private R+D+i initiatives (and that are stemming basically from ERDF), with the aim of capturing information about the 2 pilot experience services that will be implemented during this first period.

Therefore, the proposed monitoring system is going to rely upon an ongoing monitoring of quantitative information. However, it will also include <u>in-depth interviews with stakeholders and the task force</u>, so that the task force can have feedback about the <u>perceived quality of the initial services (mainly ecosystem services)</u> that DIH are developing.

Our "source of inspiration".

It should be pointed out that DIH are a "brand new" instrument of open innovation being implemented in Galicia. Furthermore, thanks to the participation of GAIN in the MONITORIS3 project, it has been identified as a unique opportunity to build up a new monitoring system by introducing instruments of monitorization that are quite at odds with the Spanish administrative style, which has been characterized as a "top-down reactive" policy style ("Policy Styles and Policy-Making: Exploring the Linkage", Michael Howlett, Jale Tosun – 2018). The DIH monitoring system designed through this action aims to monitor DIH performance through bottom-up strategies which have been very much inspired by the successful monitoring strategies of some of our partners, namely NORLAND through the monitorization of its MOFI instrument.

Our source of inspiration has been MOFI (Mobilisation for R & D based innovation in private companies), a programme developed by NORLAND.

During the ITS, NORLAND explained how its "MOFI" instrument is implemented. One of its pillars is to mobilize or stimulate more companies to use more research and innovation.

The monitoring system consists on a review system, build upon a really easy-going three colour warning system (in similar way to a traffic-light), done twice a year, after interviewing the beneficiaries, that allows NORLAND to monitor innovation activities that are being supported by the Administration. The monitoring system is followed by an informative discussion with the project management about respective adjustments. This Good Practice was explained by NORLAND during the 7th ITS, celebrated in Timisoara (Romania) last March 7th 2019.

The aim of GAIN is to replicate this review system in the evaluation interviews that are going to be part of the DIH monitoring system. These interviews are going to be conducted with SME and the DIH task force. As we will explain below, the interviews and the "traffic light" review system are intended to 1) establish a bottom-up system for gathering information about the practical functioning of DIH; and 2) give a reliable but easy-to understand feedback to DIH task force.

Description of the Action

The aim of this action is to establish the basis for Monitoring Digital Innovation Hubs. The monitoring system will be designed from a "user-oriented evaluation perspective". User-oriented evaluation takes as its primary source of information some user or set of users (in our case, SME) who need to accomplish some task (in our case, digitalization), and sets out to discover through monitoring and evaluation whether a given policy instrument (In our case, DIH) will help them to do so effectively, productively, safely, and with a sense of satisfaction.

DIH Monitoring system will build upon two pillars:

1. An ongoing quantitative information system, designed to gather information about those activities that DIH should develop (especially technological and business services). The implementation of this Action Plan will focus on gathering quantitative information about the 2 pilot user experiences that will be included during the establishment period of DIH. These experiences will help to determine if the selected variables are appropriate to give feedback to GAIN about the performance of these pilot experiences, and also if they might be useful to monitor SO 1.2.1 of Galician OP 2014-2020 (funded by ERDF).

Its own "terms of reference" for the Monitoring and Evaluation: based upon the agreement signed among GAIN and the DIH promoters, the stakeholders involved in the Monitoring process (GAIN, DIH task force, DIH promoters and end users -SME), stakeholders will identify, prior to the implementation of the monitoring system, what are the crucial variables that should be monitored to determine if: a) DIH objectives are being achieved, and 2) if DIH are responding to end-users needs (SME). These variables will integrate the "script" of the in-depth interviews that are described in Phase 2 of this Action, and which are directly inspired by the Monitoring system of MOFI.

The design and implementation of this monitoring system is expected to be implemented during 24 months, according to the following schedule:

PHASE 0. Designing of DIH Establishment and its Monitoring System (July 1st 2019 -December 31st 2019-6 months.).

In the last six months, GAIN has been working on the conditions under which DIH establishment should take place. This also includes the monitorization of DIH's initial steps, which seem crucial to ensure the responsiveness of this institutional arrangement to SME digital innovation needs.

Therefore, the close monitorization of the four above-mentioned tasks that DIH (Completion of Viability Plan, Business Plan, Governance agreement, and the Setting up of a Catalogue of Services) will be at the core of the Financial Cooperation Agreement signed between GAIN and DIH's promoters.

Moreover: the monitorization of DIH will be considered as an internal monitorization and, as such, it will be part of the obligations of the technical assistance that will give support to the DIH in its initial steps.

GAIN is already working on the public procurement process to hire this technical assistance, and we expect that this service will be already hired by January 2020.

Main expected outputs:

- 1. Hiring of a external technical assistance.
- 2. Two (2) Formal Agreements signed.

PHASE 1 (1 January 2020- 30 March 2020 -3 months-): Terms of Reference and design of the Monitoring system.

The following 3 months will be devoted to designing the "terms of Reference" -ToR- for the evaluation. ToRs provide an important overview of what is expected in an evaluation. In an external evaluation, the ToR document provides the basis for a contractual arrangement between the commissioners of an evaluation and a consultant/evaluation team and establishes the parameters against which the success of an evaluation assignment can be assessed. Common elements of a ToR include:

- 1. Why and for whom the evaluation is being done
 - Background knowledge about the evaluand including objective, strategy and progress to
 - Purpose(s) of the evaluation
 - Primary intended users and uses. Inspired by MOFI philosophy, the ToR must take into account if DIH are responding to end-users needs by means of helping them to face their Digital Innovation Needs.
 - Key evaluation questions.
- 2. How it will be accomplished
 - Overall scope and approach
 - Evaluation methodology/evaluation plan (sometimes done as part of the ToR and sometimes done as part of the evaluation proposal or as the first deliverable in the evaluation project)
- 4. Milestones, deliverables and timelines
 - What deliverables are required and when for example, detailed evaluation plan, inception report, progress report, interim report, draft final report, final report
 - **Timelines**

Therefore, this phase will involve GAIN and DIH stakeholders:

- its promotors,
- DIH task force (a mix of GAIN public employees and promotors'employees).
- A sample of DIH beneficiaries.

Expected ouputs:

ToR agreed.



PHASE 2 (1 April 2020- 30 March 2021 -12 months-). Implementation of the Monitoring System. As stated, lines above, the DIH monitoring system will rely upon 2 pillars:

- 1. An ongoing quantitative information system designed to gather information about those user- pilot activities that DIH should develop. Therefore, a battery of indicators will be chosen, making an emphasis on:
 - those quantitative indicators that already in use to monitor private-public R+D+I projects, and which are already part of the Galicia ERDF OP 2014-2020. Some examples of those indicators might be "improvement of business turnover" or " increase in number of employments". In fact, the selection of appropriate indicators will be also part of the ToR.
 - b. The operationalization of indicators to gather specific information about DIH activities. This will be done along the following dimensions:
 - i. Significant growth in collaboration among companies
 - ii. Significant growth in private-public collaboration
 - iii. Ability to fund raising.
 - iv. Positive internal changes in organization and daily operations of DIH's Information should be gathered every 3 months. Reports will be handled to the DIH task force and members of its governance structures
- 2. In depth interviews: based upon MOFI, the monitoring of DIH activities will also rely upon in-depth interviews. Its questions and content will be previously agreed through ToR. The aim of these interviews is to gather qualitative information about the responsiveness of DIH initial activities to SME digitalization needs (especially the catalogue of services, business plan and other ecosystem services). For doing so, we will conduct the interviews on two samples:
 - a. We will conduct interviews to a panel sample each three months to the same sample. This will be a sample of SME representatives, chosen by DIH promotors. The advantage of using a panel sample is that we will be able to track the perceptions of the same components to changes in DIH performance over time.
 - b. We will conduct the same interview over a random sample of SME users of DIH services every three months, avoiding in this way panel conditioning responses. The population used to choose this sample will be SME asking for any kind of support form the DIH, but also hypothetical participants on the two foreseen pilot user experiences.
 - 3. The results of the interviews will be reported to:
 - The DIH task force, by means of an informative discussion with the project respective adjustments.
 - B) The DIH governance system, in order to make them now if corrective o reorientation actions should be implemented to ensure the effectiveness of DIH.

This reporting process will be directly inspired by MOFI, also making use of the easy-going three colour warning system, applied to each of the variables under consideration to determine the effectiveness of DIH performance.

Expected outputs.. Monitorization of quantitative indicators performed every 3 months.

- Two (2) samples identified
- Interview reports delivered every three months (at least 3 rounds of interviews, and 3 reports based upon the MOFI's three-colour warning system).

PHASE 3 (1 April 2021 - 30 June 2021 - 3 months-).

A mid-term evaluation report will be handle to DIH governance structure. This evaluation report be the only lasting record of DIH monitoring, including the results achieved and the lessons that were learned from commissioning of DIH during 12 months.

The report should include information about:

- 1. The ability of DIH services developed to give response to SME digitalization needs.
- 2. The impact of DIH initial activities on:
 - a. Significant growth in collaboration among companies
 - b. Significant growth in private-public collaboration



- c. Ability to fund raising.
- d. Positive internal changes in organization and daily operations of DIH's.
- 3. The performance of DIH 2 pilot user experiences according to ERDF selected indicators (related to SO 1.2.1).
- 4. The perception of governance structure member about the quality of the monitoring system, vis-à-vis the ToR.

Expected outputs

1 Mid-term report evaluation.

Players involved

GAIN.

GAIN is funding, through a twofold mechanism, the commissioning of DIH. Moreover, it is part of its Task Force. Therefore, it is actively interested on designing and implementing a useful and reliable monitoring system

DIH promoters.

DIH promoters are in charge of ensuring that the DIH goals are met . Hence, they must facilitate DIH evaluation, and they will be directly involved in its design. They are also part of DIH's Taks Force.

DIH users

These are the real "keepers" of the evaluation system. Whether they are part of the panel or te random sample, they might have an active interest in DIH services, and therefore, an active interest on assuring a correct function and response ability by part of both DIH's.

Other Regional Governmental departments.

There are some other regional governmental departments that, in the mid-term, could support DIH's activities through specific calls to fund business services. This is the case of IGAPE -the Regional Agency for Economic Development-

Timeframe

From July 1st 2019 to June 30th 2021.

Costs

Item description	Staff costs	External expertise and services
3 Technicians, 10% salary costs	22.103,00 €	
Coordination (5% director Programme		
area)	5.362,00€	
Institutional representation (2% GAIN dir-		
ector)	2.574,00€	
Technical Assistance		15.730,00€

			Total Action 2
Subtotal	30.044,00 €	15.730,00 €	45.774,00 €

Costs associated to this action sum up a total of 48.379,00 €. Costs devoted to staff consume 65.63% of the total costs, because the Action will involve part of the Task Force of DIH, as well as follow -up tasks, coordination taks and some representation tasks by part of GAIN.

On top of that, external services (part of the costs associated to the commissioning technical assistance of DIH) are going to be devoted to this Action.

Funding sources

Own regional funds from Galicia Region

Date:	
Signature:	
·	
Stamp of the organisation (if available):	



