FOSC – Assessing the impact of climate change on food and nutrition security and designing more sustainable and resilient food systems in Europe, Africa and Latin America

Guidelines for Applicants

published on ……, 2019

Deadline for submission of pre-proposals:
February 12, 2020, 17:00 h (CET)
Deadline for submission of full proposals:
July 21, 2020, 17:00 h (CEST)

The project receives funding from the European Union's Horizon2020 Research& Innovation Programme under grant agreement no 862555, FOSC

Table of content

Background **3**
1. Project areas and scope **4**
2. Participation to the call and funding modalities **5**
3. Timeline **7**
4. Call secretariat **8**
5. FOSC general eligibility criteria **8**
6. Submission of pre-proposals **8**
6.1. The project coordinator 9
6.2. Use of the online submission tool 9
7. Eligibility check of pre-proposals **10**
8. Expert evaluation of pre-proposals **11**
9. Selection of pre-proposals **12**
10. Submission of full proposals **12**
11. Eligibility check and expert evaluation of full proposals **13**
12. Selection of projects to be funded **14**
13. Confidentiality and conflict of interest **14**
14. Obligations for funded projects **15**
14.1. Ethical aspects 15
14.2. Terms of participation 15
14.3. Contractual Relationships 15
14.4. Funding Contracts 15
14.5. Consortium Agreement 15
14.6. Intellectual Property Rights, use and access to results 16
14.7. Data management issues 16
14.8. Communication, dissemination and exploitation of the results 16
14.9. Open Access 16
14.10. Start and end dates of projects 17
14.11. Project monitoring, meetings and reporting 17
14.12. Publishable data 18
15. Quick guide "How to apply to the FOSC Call" **19**
ANNEX 1: Data Management Plan **21**
ANNEX 2: Plan for Communication, Dissemination and Exploitation of the results **23**
ANNEX 3: National or Regional Contact Points **25**

Background

Todays' world faces one of the biggest challenges of the 21st century: how to feed 9 to 10 billion people by 2050. Meeting this need based on current patterns of food consumption and production will increase the pressure on already scarce natural resources. Food is essential for all human beings; global peace and stability are largely underpinned by the ability to provide healthy diets for all. Sustainable Food and Nutrition Security in a changing world is thus an increasingly urgent challenge. This is due to the combined effects of increasing natural resource scarcity (e.g. water, soil), environmental degradation (e.g. loss of biodiversity), the need to reduce greenhouse gas emissions, changing demographics and wealth, migration and geopolitical instabilities. Climate change represents an additional threat, and is already undermining agriculture and food systems in many regions, making it more difficult to achieve food security and nutritional goals, and to reduce poverty. Climate change will affect food systems globally and is a major issue for all countries. However, impacts on low-income countries are expected to be particularly strong.

The above trends make it clear that we cannot continue to adopt a 'business as usual' approach if we are to develop and implement sustainable and resilient solutions. We have to address the challenges and related national commitments that lie at the heart of the Paris Agreement on Climate Change and the UN Sustainable Development Goals (SDG). Ensuring Food and Nutrition Security in the long-term, while containing global warming within 1.5 or 2°C, will require a societal-level and systemic transformation of our current-day, predominantly short-term vision of food systems. This transformation will also require a change in culture, including the transformation of education and training, and an overall change in consumption patterns and citizens' behaviour.

The implications for the food system as a whole – including production, processing, retail, consumption, waste disposal, regulatory, institutional and social environment, ecosystems/biodiversity, and human nutrition and health- require the combination of:

- incremental adaptation (precision agriculture, remote sensing, increased efficiency, waste reduction…);
- systemic adaptation (soil and water resources conservation, increased use of genetic diversity…);
- transformative adaptation (redesign of farming systems, agroecology, agroforestry, supply chain transformation, dietary shifts…).

Concurrently, we must ensure that food systems are robust to the impacts of climate change, for example on food availability, quality, or price. Furthermore, both co-benefits and adverse side-effects may exist between climate change adaptation and mitigation. The idea of "Climate-smart" food systems is an integrated approach to dealing with the natural, technical, economic and social aspects of several interlinked activity areas of primary agriculture, food production and processing, retail and consumption, and food waste.

Transforming our food systems from farm to fork provides an opportunity to develop approaches, technologies and business models that will concurrently improve environmental and health aspects, sustainability, employment opportunities, prosperity, equity and the wellbeing of human communities.

FOSC brings together owners and managers of national and regional R&D&I programmes of EU Member States, EU-associated States, African States, Latin American States and third countries with significant experience in research funding and coordination.

FOSC aims to connect research partners with different but complementary scientific and technological expertise to maximise resources and share risks, costs and skills. Funding under FOSC's co-funded Call will support basic and applied food systems and climate research.

1. Project areas and scope

The aim of the Call is to support scientifically excellent, trans-continental research, development and innovation projects that contribute to the food systems and climate change. The call for proposal is focused on the interactions between climate change and food systems: assessing the consequences of climate change on agrifood markets, developing sustainable and resilient food value chains, influenced by changing food needs and patterns (diets).

The call for proposal will take into account regional and global issues, and challenges related to resilient food systems, with the aim of promoting cooperation and strengthening regional capabilities. For this purpose, research funding bodies from Africa, Europe and Latin America are jointly funding collaborative research projects with a focus on food system resilience to climate change. Key areas for research include the biophysical, social, cultural, economic and environmental dimensions of food system resilience, the roles of regional food supply and demand patterns, and the role of food losses and waste management.

Climate change will affect food systems globally and is a major issue for all countries. Specific focus will be put on the socio-economic impacts of climate change and their consequences on different regional food systems, including price volatility and the territorial dimension regarding access to nutritious foodstuffs. Integration between outcomes of projects with a regional focus should allow global processes to be addressed.

Projects will aim to develop risks analysis focusing on vulnerabilities of food systems faced with climate change, including expected changes in supply chains, and proposing low carbon footprint solutions (technological and/or non-technological). Increased knowledge about the health benefits of food with low carbon footprint, as well as more knowledge about the climate impact of food is also likely to influence consumer preferences and dietary choices.

Regional food systems resilience under climate change will be further affected by the frequency and the intensity of extreme weather events (heat waves, heavy precipitations, droughts, *etc*.) and by the timing of these events during the agricultural production cycles (crop phenology, sowing and harvest dates, *etc*.). This may also affect the epidemiology of plant and animal pests and pathogens, crop and livestock losses, as well as post-harvest losses. There is, therefore, a need to integrate climatic variability and extreme events into the study of food systems, to understand the impact upon food security, safety and resilience to climate change.

Climate change will have impacts on agriculture production in terms of quality (e.g. micronutrients), availability, price and affordability of food. This will influence the demand, the diets and likely also the preferences of consumers, as they adapt to changes. Climate change impacts on food production can also be indirect through international trade and various price effects. They will likely lead to policy measures being taken, to prevent undernourishment or (worst case) famines and on the other hand to reduce obesity, to ensure reformulation, healthy diets and sustainable food production. Projections of food systems resilience should encompass these dimensions and consider the design of local, regional and global solutions. The proposals have to contribute to food security and safety, to increase resilience and sustainability of food systems. They have to promote enabling conditions to reduce poverty and inequalities.

To fully consider food security across its four pillars (availability, access, utilization, and stability[1]), the assessment of risks, possible scenarios and solutions must include access to healthy and safe food.

[1] *Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. The four pillars of food security are availability, access, utilization and stability. The*

Variability and uncertainty also have to be taken into account. These estimations are required at fine temporal scale, as food security be progressively eroded by medium-term stressors, but can also fail catastrophically in a short term (sub-annual timescale). What may be perceived as unsubstantial changes in food price can, when coupled with reduced income, lead to increases in the real food price and possible detrimental impacts for health. At the regional or national level, the proportion of the population impacted by these changes may be non-linear, due to the uneven distribution of income.

The submitted proposals must be multidisciplinary and should address **at least one** of the following topics:

- **Assess climate change-related risks for food value chains, including impacts on producers, prices, availability, quality, international trade and food security, and resulting changes in consumer behaviours;**
- **Promote innovative technology deployment to build sustainable and resilient food value chains influenced by changing food needs and patterns, and to develop better efficiency of the inputs and outputs of food systems;**
- **Improve resilience and reduce volatility in agri-food production and food markets to sustainably improve food security in the context of climatic variation;**
- **Reduce food losses under climate change, including novel approaches to valorise side streams and reduce food waste.**

Regarding all topics, applying research consortia should clearly state how their project aims will be relevant and/or contribute to the UN Sustainable Development Goals (SDG) (http://www.un.org/sustainabledevelopment/sustainable-development-goals/) and Paris Agreement on Climate Change.

Different scales should be addressed in the proposals:

- For the spatial scales, it is suggested to combine local case studies (e.g. farm scales) and projections at the regional level. Comparisons between different regions will be welcome as well as global assessments.
- For the time scales, the 2050 time horizon will be selected. Transitions between current conditions and those in 2050 will be studied considering relevant scenarios that integrate multiple drivers, including climate trends and climatic variability with special attention to risks caused by extreme weather events and demographic evolution.

Three main geographic regions targeted will be Africa, Europe and Latin America. Global approach will be considered too.

2. Participation to the call and funding modalities

The following funding bodies will be participating in this joint Call for transnational collaborative research projects:

ALGERIA	Ministère de l'Enseignement Supérieur et De La de la Recherche Scientifique (MESRS)
BELGIUM	Federaal Fonds Voor Wetenschappelijk Onderzoek (FNRS)
BELGIUM	Fonds Voor Wetenschappelijk Onderzoek-Vlaanderen (FWO)

nutritional dimension is integral to the concept of food security (Committee on World Food Security-FAO Reform Document 2009)

BURKINA FASO	Fonds National de la Recherche et de l'Innovation pour le Développement (FO.N.R.I.D.)
EGYPT	Ministry of Higher Education and Scientific Research (MHESR)
FRANCE	Agence Nationale de la Recherche (ANR)
GERMANY	Bundesanstalt Für Landwirtschaft Und Ernährung (BLE)
HONDURAS	Fundacion Hondurena de Investigacion Agricola (FHIA)
HUNGARY	Ministry of Agriculture (AM)
HUNGARY	Nemzeti Kutatasi Fejlesztesi Es Innovacios Hivatal (NKFIH)
IRELAND	Department Of Agriculture, Food And The Marine (DAFM)
ITALY	Centro Internazionale Di Altistudi Agronomici Mediterranei (CIHEAM-IAMB)
ITALY	Ministero delle Politiche Agricole Alimentari e Forestali (MIPAAF)
KENYA	Ministry of Education Science and Technology (MOEST)
NETHERLANDS	Ministerie van Landbouw, Natuur En Voedselkwaliteit (LNV)
NORWAY	Norges Forskningsrad (RCN)
PANAMA	Secretaria Nacional de Ciencia, Tecnologia e Innovacion (SENACYT)
SENEGAL	Ministère de la Recherche Scientifique (MBERRS)
SOUTH AFRICA	National Research Foundation (NRF)
SWEDEN	Forskningsrådet För Miljö, Areella Näringar Och Samhällsbyggande (FORMAS)
TURKEY	Ministry of Agriculture and Forestry (TAGEM)
TURKEY	Türkiye Bilimsel ve Teknolojik Araştırma Kurumu (TÜBİTAK)
UNITED KINGDOM	The Secretary of State for Environment, Food and Rural Affairs (DEFRA)

Funding will be provided for scientifically and technologically excellent projects managed by universities, other research organisations and companies from FOSC partner countries. Funding will follow the *nationality principle* meaning each participating national or regional funding agency will fund its respective national/regional research partners in a particular project consortium. Note that national / regional budgets differ, which limits funding possibilities for lower ranked proposals.

➔ ***Please carefully check the national/regional funding regulations (see "National/Regional Funding Regulations" documents on*** https://ptoutline.eu/app/fosc ***because some of the topics described below may not be suitable/eligible for all funding bodies.***

In addition, applying research consortia are encouraged to interact and include partners of the private sector (e.g. SMEs), stakeholders and/or end-users while preparing the proposal and carrying out the project. Where possible SMEs and other stakeholders should be encouraged to participate in the consortia, to enhance impact, facilitate knowledge exchange and uptake of results to deliver measurable benefits to Food Systems and Climate researches in Europe, Africa and Latin America. However, the inclusion and support of any type of stakeholder as an active partner in the research consortia depends on the national/regional funding regulations defined by the funding bodies (see **"National/Regional Funding Regulations"** documents on the submission system (https://ptoutline.eu/app/fosc).

Further, projects are required to consider the following principles:

- All project partners should contribute to, and benefit from, equitable and balanced cooperation.
- Results of collaborative projects must be shared within the research consortium through a controlled process that adequately protects and equitably allocates intellectual property used in, and generated during, joint research and development.
- Each **full proposal** must include a one-page Data Management (DM) Plan to ensure the availability of data generated by the research proposed. Applicants are encouraged (but not obliged) to utilise available DM services.
- Each **pre-proposal** must allocate an appropriate budget for communication, dissemination and valorisation of the results, whereas each **full proposal** must also include a one A4-page plan for communication, dissemination and valorisation of the results and an appropriate budget for those activities. Furthermore, applicants are advised to take into consideration the guidelines on "Communicating EU Research & Innovation" by the European Commission (download from http://ec.europa.eu/research/participants/data/ref/h2020/other/gm/h2020-guide comm_en.pdf.

Exploitation of the project results can aim at different target groups, support policy makers, and be used in industry and/or education, *etc*., as appropriate particularly from applied research proposals. The project duration must not exceed 3 years (36 months). Project budgets must convincingly allow the achievement of the project goals and must not exceed national or regional funding limits for each partner (for details see "National/Regional Funding Regulations" document on https://ptoutline.eu/app/fosc.

3. Timeline

The call involves a 2-step procedure with submission and selection of pre-proposals and, subsequently, invitation of shortlisted consortia to submit full proposals. The respective time schedule and activities required are listed in the table below.

Date	Action
1th November 2019	Pre-announcement Co-funded Call
2nd December 2019	Launch of the call
12th February 2020	Deadline pre-proposals
12th May 2020	Selected pre-proposals are invited for 2nd step
21st July 2020	Deadline full proposal
13th October 2020	Applicants are informed of the selection results + start of national negotiation
Dec./2020-Feb./2021	Start of projects

4. Call secretariat

The Call Secretariat will provide administrative and technical support to applicants regarding the call, call documents and procedures. It is the primary point of contact between the research project consortium and the FOSC funding bodies for all general matters in relation to the call.

Federal Office for Agriculture and Food (BLE, DE)

[to be completed by BLE]

The National Contact Points, listed in Annex 3, are supporting the Call Secretariat and should be contacted for all matters regarding national regulations and funding. It is strongly recommended to get in touch with your National Contact Point in order to limit procedural errors.

5. FOSC general eligibility criteria

The application has to meet and consider the following general eligibility criteria:

- Consortia must include, minimum 4 countries from 2 continents (Europe, Africa, Latin America): at least 2 European countries (EU members and H2020 associated countries) and at least 2 from Latin American or African countries participating to the call.
- Pre-proposals and full proposals must be written in English.
- Pre-proposals and Full proposals must be submitted before the submission deadlines mentioned page 1 of this document via the FOSC submission website https://ptoutline.eu/app/fosc.
- The project duration **must not exceed 3 years** (36 months).
- The funding requested by applicant(s) from a single region/country cannot represent more than 70% of the funding requested by the consortium.
- The coordinator of any applying consortium must be from an organisation that is eligible for funding from one of the agencies participating in the call, i.e. an organisation that plans to participate at their own expense, without public funding provided via the FOSC joint call, cannot act as coordinator.
- Partners from countries not participating in the Call may participate in a project at their own expense, if their contribution is important to achieve the project goals. The coordinator should take steps to ensure that sufficient funds are secured from these additional partners, and evidence of the availability of funds should be provided prior to project submission (Letter of Commitment). The same applies for partners who are not eligible for or do not seek national/regional funding from the agencies participating in the Call. Partners participating at their own expense do not count towards the minimum number of participants.

Funding is subject to national/regional eligibility regulations (see Call Documents at https://ptoutline.eu/app/fosc and project partners should check their eligibility for funding prior to submission.

If national/regional forms are required, these must be submitted directly to the national/regional agency by the deadlines stated in the national/regional funding regulations. (see "National/Regional Funding Regulations" document on https://ptoutline.eu/app/fosc.

6. Submission of pre-proposals

Pre-proposals must be submitted by **February 12, 2020 (17:00 CET)** via the FOSC submission website https://ptoutline.eu/app/fosc.

No other methods or means of submissions will be accepted. It will be possible to update and resubmit the pre-proposal as many times as required up to the submission deadline, but not after the deadline has expired.

Applicants should note that the online system may experience high traffic volumes in the last hours before the submission deadline and it is therefore highly recommended to submit the final version of the pre-proposal well in advance of the deadline to avoid any last minute technical problems. Requests for extensions to the deadline due to last minute technical problems will not be considered.

Please follow the instructions on the website to submit the pre-proposal.

The application should be submitted by the project coordinator on behalf of the project consortium (see below).

6.1. The project coordinator

Each project consortium needs to appoint a project coordinator, who, in any commissioned project, has the following role and responsibilities:

- The project coordinator will lead the consortium through the application procedure and is fully responsible for the overall project coordination.
- The project coordinator has to make sure the project complies with FOSC requirements as detailed above and in the Call Text (Announcement). While all partners should resolve possible queries with their respective national or regional funders, the project coordinator has a responsibility to coordinate these activities in close contact with the FOSC Call Secretariat and the contact persons of his/her national or regional funding organisation.
- All communication with FOSC concerning the project will be through the project coordinator. Consequently, the project coordinator has to disseminate information provided by FOSC to all consortium partners.
- Before submission of a pre-proposal the coordinator has to make sure that all consortium partners requesting funding from FOSC are eligible for support from their respective national or regional FOSC funding bodies. For additional partners who are not eligible for support from at least one of the FOSC funding organisations (e.g. international partners from non-FOSC countries) the coordinator has to ensure that each of these partners possess the required financial security to fulfil their tasks within the project via a letter of commitment/support. This letter can be uploaded as pdf file (max. 5MB size) only by the coordinator in a separate upload field in the submission system under https://ptoutline.eu/app/fosc. A template for such a letter is provided there under the call documents.

Consortia have to be aware that failure of one partner within the consortium to meet the national/regional eligibility criteria will result in the rejection of the entire proposal. It is therefore strongly recommended that the project coordinator verifies that the project partners contact their National Contact Points in order to check their eligibility.

The project coordinator will NOT be responsible for the financial management of FOSC project funding, which will be handled directly between the national research institutions / industries and their national funding bodies in each participating country.

6.2. Use of the online submission tool

It is the duty of the coordinator to enter the data online. The application must follow the Pre-proposal template available on FOSC submission website https://ptoutline.eu/app/fosc.

The project coordinator has to list all partners of the consortium. After having activated the partners in the submission platform, they receive a confirmation email and can change their contact data and complement their tasks in the project.

The project description should:

- provide a scientific/technological overview,
- specify the expected project impact and relevance to the call scope,
- describe the added value for the European, African and Latin American research and Innovation, and the necessary resources,
- provide information on the project management and responsibilities of the project partners and give a short overview of the division of the collaborative project into work packages,
- be in line with the requirements stated in the Call Text (Announcement) and in section 2 and 6 of this document.
- The space in the proposal part "Project description" is limited to 20,000 characters incl. space (~ 5 pages DIN A4, Arial 11pt, line pitch at least 1.15). Implementation of up to three graphics/images is allowed and possible (allowed formats are jpg, png or gif, max. resolution 600x600px, max. file size 2MB). No additional documents will be considered.

Note: Although no specific description of the data management of the proposed project is foreseen in the pre-proposal, the consortia must consider the costs for data management, communication and dissemination activities in their proposals. Please also check the national/regional funding regulations, if these costs can be covered by your funding body.

In addition, in order to exclude individual conflicts of interest, the applicants are encouraged to provide a maximum of two persons (e.g. direct competitors), who should be excluded from reviewing the proposal. The full name(s), affiliation (research institution, organisation) and reason for refusal of the expert(s) has to be provided during proposal submission. The information will be confidentially treated.

It is strongly recommended to save regularly the changes in order to avoid any data loss. For security issues, an automatic logout is set up within this tool.

Data entered by the coordinator and the project partners in the FOSC submission tool will be saved in a database and will be used to generate the pre-proposal document. The pre-proposal document is available, for information only, at any time for download and provides an overview of all entered data (it is not required e.g. to print it and send a hardcopy to the Call secretariat).

Applicants should note that **information given in the pre-proposal is binding and cannot be changed in full proposals**, in particular, neither the composition of the consortia nor the funding requested by each partner in the second step unless explicitly requested by a Funding body or the International Expert Panel.

The submission of a pre-proposal is mandatory and it will not be possible to enter the application procedure at a later stage.

The information given in the pre-proposal will be used to check for eligibility, to find appropriate evaluation experts and to evaluate the proposal.

For any technical questions regarding the submission, please contact the Call secretariat.

7. Eligibility check of pre-proposals

After the submission deadline all pre-proposals will be checked against different eligibility criteria:

- **General eligibility criteria**: The pre-proposal must comply with the call eligibility criteria mentioned in section 6.
- **National eligibility criteria**: All project partners involved in an application have to assure that requested costs and thematic areas are in line with the respective national eligibility criteria published in the National Regulations (see "National/Regional Funding Regulations" document on https://ptoutline.eu/app/fosc. In case of uncertainties regarding the national criteria and regulations, please contact your National Contact Point.
- **Ethical issues**: Work involving the use of animals or humans should be carried out under the appropriate authorization taking into account local ethical requirements. Any proposal, which seems to contravene fundamental ethical principles, shall not be selected, and may be excluded from the evaluation and selection procedure. Judgment of the significance of ethical issues will be made by using the criteria published by the Commission in its guidelines for the Horizon 2020 Framework Programme http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/ethics/h2020_hi_ethics-self-assess_en.pdf

In case one partner of the project consortium appears not to be eligible, the Call Steering Committee, which consists of all FOSC funding bodies, will reject the pre-proposal.

Pre-proposals which are eligible in terms of the formal and national eligibility criteria will be identified. Only pre-proposals which meet these criteria will be forwarded to the expert evaluation.

8. Expert evaluation of pre-proposals

Eligible pre-proposals will be peer-review evaluated and ranked by an international expert panel (IEP) according to the following criteria:

- **Relevance** of the project to the scientific scope of the co-funded Call
- **Excellence**
  - Clarity and pertinence of the objectives
  - Soundness of the concept
  - Credibility of the proposed methodology
  - Quality and expertise of the consortium as a whole
  - Degree of novelty and innovation of the proposed research
- **Impact**

  Extent to which the outputs of the project will be relevant for, or contribute to, impacts on:

  - Economic aspects
  - Environmental aspects
  - Societal aspects such as Ethical, Legal and Social Aspects (ELSA)
  - Transcontinental added value
  - Knowledge generation

Additionally to the above mentioned criteria, also the **Ethical issues** will be assessed by experts to complement the information provided by the funding bodies.

Each reviewer/expert will be independent of any funding organisation involved in this call. The FOSC Call secretariat will ensure that no Conflict of Interest exists concerning the experts and the proposals evaluated. Each pre-proposal will be reviewed by three reviewers/experts.

The scoring system uses a 5-point scale for all review criteria. The IEP will provide the pre-proposal evaluations and will also have the possibility to suggest specific recommendations. The evaluations will be used for delivering a ranking list.

9. Selection of pre-proposals

The FOSC Call Steering Committee will select proposals for the second application step based on the ranking proposed by an international panel of external reviewers and national funding availability.

Applicants are informed that while performing this selection, the FOSC Call Steering Committee will ensure that the oversubscription factor of each funding body is not higher than 3.

Oversubscription factor: the ratio between the total requested funds from all the applicants from a given country or region, and the amount available for the corresponding funding body in that call (see Call Text - Announcement).

The FOSC Call Secretariat will inform the project coordinators of the results of the first assessment step via e-mail from Mid-May, 2020. Coordinators of selected pre-proposals will be invited to submit a full proposal via the FOSC submission website https://ptoutline.eu/app/fosc.

An invitation to submit a full proposal does not implicitly result in the right of getting funded by the FOSC funding bodies - even if the full proposal gets evaluated positively by the experts' panel (the final selection will be based on the ranking list provided by the IEP and the available funding resources).

10. Submission of full proposals

Only research consortia which have successfully passed the first step will be invited to submit a full proposal. The deadline for submitting full proposals via https://ptoutline.eu/app/fosc is **July 21, 2020 (17:00 CEST).**

The basic project data, such as project title, project acronym, project area, project duration, consortium composition, project coordinator, TRL level, total requested funding, requested funding by each partner etc., provided in the pre-proposal cannot be changed in the full proposal phase. The information provided in the pre-proposal will be automatically imported into the full proposal.

Completing the full proposal form

- Please check the information given in your full proposal and make sure it is correct.
- No changes in the core data submitted with the pre-proposal are allowed. If you feel that any changes are necessary, please contact the FOSC Call secretariat for approval.
- Please follow the template and be aware that the project description should allow the evaluators to assess properly all evaluation criteria as laid down in the Call Text (Announcement).
- Your full proposal must include a separate
  - Data management plan **(one A4 page)**
  - Communication, dissemination and exploitation plan, reaching out to the wider public **(one A4 page)**.
- The project description is limited to a maximum of 20 DIN A4 pages (Arial 11pt, line pitch at least 1.15). Up to 1 additional DIN A4 page (Arial 11pt, line pitch at least 1.15) is foreseen for the publishable project summary. Different subsections may vary in length. Implementation of up to six graphics/images is allowed and possible (allowed formats are jpg, png or gif, max. resolution 600x600px, max. file size 2MB). No additional documents will be considered.

Additional information for the submission of full proposals (guideline and template) will be available with the invitations for full proposals and published on the submission platform.

11. Eligibility check and expert evaluation of full proposals

General eligibility criteria and national / regional eligibility assessed at the stage of pre-proposal will be checked again at the stage of full proposal.

Full proposals that are eligible according to the above stated eligibility criteria, submitted correctly and within the deadline will undergo peer-review evaluation by an international panel of experts with relevant expertise in the scientific field(s) concerned. Each expert is independent of any funding organisation involved in this call and no Conflict of Interest will exist in relation to the proposal evaluated. Each proposal will be reviewed by at least three external reviewers/experts from different institutions. The composition of the international evaluation panel is decided by the FOSC Call Steering Committee. Full proposals are subjected to a thorough quality assessment according to the evaluation criteria:

- **Excellence**
    - Clarity and pertinence of the objectives
    - Soundness of the concept
    - Credibility of the proposed methodology
    - Quality and expertise of the consortium as a whole
    - Degree of novelty and innovation of the proposed approach
- **Impact**

Extent to which the outputs of the project will be relevant for, or contribute to, impacts on:

- Economic aspects
- Environmental aspects
- Societal aspects such as Ethical, Legal and Social Aspects (ELSA)
- Transcontinental added value
- Knowledge generation

- **Quality and efficiency of the implementation**
    - Quality and effectiveness of the work plan, including extent to which the resources assigned to work packages are in line with their objectives and deliverables,
    - Appropriateness of the management structures and procedures, including risk and innovation management,
    - Complementarity of the participants and extent to which the consortium as a whole brings together the necessary expertise,
    - Appropriateness of the allocation of tasks, ensuring that all participants have a valid role and adequate resources in the project to fulfil that role,
    - The project budget is appropriate to the planned work and allows the achievement of the project goals.

For both pre- and full proposal stages evaluation scores will be awarded for each of the three main criteria. Sub-criteria are aspects that the expert will consider in the assessment of that criterion. Each criterion will be scored out of 5 and equally weighted.

The 0-5 scoring system for each criterion indicates the following assessment:

0 *- The proposal fails to address the criterion or cannot be assessed due to missing or incomplete information.*

1 *- Poor. The criterion is inadequately addressed, or there are serious inherent weaknesses.*

2 *- Fair. The proposal broadly addresses the criterion, but there are significant weaknesses.*

3 *- Good. The proposal addresses the criterion well, but a number of shortcomings are present.*

4 *- Very Good. The proposal addresses the criterion very well, but a small number of shortcomings are present.*

5 *- Excellent. The proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor.*

The **threshold mark** for individual criteria will be **3**. The overall **threshold mark**, applying to the sum of the three individual scores, will be **10**. Thresholds will only apply during the full proposal evaluation, but not during the pre-proposal evaluation.

At the end of the evaluation process, the evaluators will decide on one final ranking list of proposals.

12. Selection of projects to be funded

Based on the ranking list and the available funding, the FOSC Call Steering Committee will decide which projects will be recommended for funding according to national and/or regional budget availability. The final decisions will be made according to the national rules of the involved funders.

The coordinators of the research consortia will be simultaneously informed about funding decisions. Evaluation summaries will be provided. The coordinators of the research consortia are responsible for forwarding all information to their research consortium partners.

13. Confidentiality and conflict of interest

In order to avoid any conflict of interest no Funding body of FOSC will be involved in the evaluation procedure (incl. the appointment of the International Evaluation Committee), if the Funding body or its affiliates plan to respond themselves to this call.

The proposals will be handled confidentially by the FOSC Call Secretariat, by the national / regional Funding bodies and the mandated experts responsible for the evaluation of the proposal. In selecting the international experts for the IEP, the Call Steering Committee shall also endeavour to avoid any possible conflicts of interest.

Each expert will have to sign a declaration of confidentiality and conflict of interest. The online evaluation tool will include a feature, which will prevent access to the proposal in case a conflict of interest is declared by the expert.

An independent observer will follow and report on the evaluation process (in line with Horizon 2020 rules).

14. Obligations for funded projects

14.1. Ethical aspects

Ethics is an integral part of research activities funded by the European Union within the H2020 and ethical compliance is considered as pivotal to achieve research excellence. This FOSC call is co-funded by the European Union, and therefore, all proposals must describe ethical issues raised and how they will be addressed so as to conform to National, European and International regulations. Guidance on ethics within H2020 is provided in the H2020 online manual and a guideline for self-assessment can be found here and applied to this Call.

14.2. Terms of participation

The national funding of the FOSC Call is offered under the coordination of the Horizon 2020 ERA-NET FOSC. Partners of the Research / Research and Innovation project consortium are required to recognize the coordinating role of FOSC throughout the duration of the funded research projects until the publication of the final report. Each Project consortium will be asked for a feedback on the processes in order to help to refine them for the future use.

14.3. Contractual Relationships

FOSC is a collaboration between national funding bodies with the aim of establishing transnational research collaboration. The contracts with researchers and industries are in the responsibility of the national funding bodies as well as the funding procedures.

Because of the fragmented nature of the funding, care will be taken to ensure that the individual contracts are synchronized both in time and content, so that the project consortium can deliver transnational outputs as described in the project proposal. The national funding bodies have to ensure that common FOSC conditions are met (e.g. common start date of a given project, reporting requirements etc.).

14.4. Funding Contracts

For the whole duration of the contract it is the responsibility of the Project Coordinator to inform the FOSC consortium about any changes of the project, i.e. modifications of the work plan, the project consortium or the contract. The communication should be transmitted through the FOSC Monitoring and Evaluation Group for approval.

Any financial issue is under the responsibility of each national funding body involved in the approved project.

14.5. Consortium Agreement

Funding bodies might require that project partners sign a Consortium Agreement (CA) before the official project start or in any case no later than three months after the project start. On request, the CA must be made available to the national or regional funding organisation(s), together with any other information required by national or regional regulations. The DESCA model, recommended by the European Commission can be used, but it is not an obligation.

In some countries / regions, such an agreement might be required for release of the funds. Applicants have to obey National Regulations regarding this issue.

14.6. Intellectual Property Rights, use and access to results

Results and new Intellectual Property Rights (IPR) arising from research projects funded through the FOSC Call will be owned by the project partners according to the conditions stated in their Consortium Agreement and shall not be in conflict with the respective national regulations. Applicants should consult the respective funding bodies, if any questions arise.

Researchers are encouraged to actively exploit the results of the research project and make them available for use, whether for commercial gain or not, for public benefit to be obtained from the knowledge created.

14.7. Data management issues

Data Management (DM) is an essential component to the success of projects using systems/synthetic biology approaches and/or tools in bioinformatics. Representatives from academia, industry, funding agencies, and scholarly publishers designed and jointly endorsed a concise and measurable set of principles referred to as FAIR Data Principles with the intention to provide a guideline for reusability of data holdings. Four foundational principles – Findability, Accessibility, Interoperability and Reusability – are a necessity of data management. The EU Commission promotes the FAIR Data Management approach within H2020.

Participation in this FOSC call requires high quality DM standards to ensure the overall sustainability of research and its expected outcome(s). Thus, each full proposal must include a one page Data Management Plan to ensure the availability of data generated by the research proposed. Applicants are encouraged (but not obliged) to utilise available DM services. The DM plan should be written according to the information in Annex 1 of this document. In case the proposed measures and activities of the DM Plan are expected to cause additional costs, an appropriate budget must be planned. Funding bodies might require an update of the DM plan during the project implementation.

14.8. Communication, dissemination and exploitation of the results

Communication and dissemination of project activities and exploitation of the results are essential part of the Responsible Research and Innovation approach. Responsible Research and Innovation means that societal actors (researchers, citizens, policy makers, business, third sector organisations, etc.) work together during the whole research and innovation process in order to better align both the process and its outcomes with the values, needs and expectations of society.

Each consortium passed into the full proposal phase has to develop and submit a one A4-page plan for communication, dissemination and exploitation of the results. Further guidance to write this plan is described in Annex 2 of this document. In addition, general guidance on communication planning for projects within the H2020 programme is available under: http://ec.europa.eu/research/participants/data/ref/h2020/other/gm/h2020 guidecomm_en.pdf.

The project partners have to acknowledge the transnational funding of the FOSC and the individual national funding partners in any document that is published (in written, oral or electronic form) within the research project.

14.9. Open Access

Correspondingly with the EU Commissions Guidelines on Open Access to Scientific Publications and Research Data in Horizon 2020 where possible, research data and scientific publication generated with FOSC funding should be made available in an open access repository whenever feasible, but taking account *inter alia* of European and national data protection rules.

Further to ensuring adherence with the principles of open access all beneficiaries of FOSC funding will be encouraged to:

- As soon as possible and at the latest on publication, deposit a machine-readable electronic copy of the published version or final peer-reviewed manuscript accepted for publication in a repository for scientific publications.
- Aim to deposit at the same time the research data needed to validate the results presented in the deposited scientific publications.
- Ensure open access to the deposited publication - via the repository - at the latest:
  - on publication, if an electronic version is available for free via the publisher, or
  - within six months of publication (twelve months for publications in the social sciences and humanities) in any other case

14.10. Start and end dates of projects

A project can start when all national contracts have been concluded. Once the national contracts come into force, eligible national costs may be claimed according to the national procedures. Projects should start between December 2020 and February 2021. In any case, projects must finish by **31st March 2024**.

14.11. Project monitoring, meetings and reporting

Partners from each funded project are expected to organise regular project meetings. The costs for these meetings must be included in the project budgets.

An internal FOSC monitoring and evaluation group will follow the work performed by the projects' consortia and may attend to the projects' meetings.

In addition, project coordinators are required to provide both a mid-term and final report as well as a non-confidential summary of the outcomes of their project for publication on FOSC website and newsletter. Hereby, FOSC wants to reach out to the wider research community and interested public, therefore a summary of research results is needed that can be understood by a wide audience. FOSC will provide a template for this summary as well as for the mid-term and final reports.

To enhance dissemination of the project results, additionally or in parallel to the own project meetings, the coordinators of the funded projects are also obliged to present their projects at three seminars to the ERA-NET FOSC partners, other interested parties and relevant stakeholders:

- an initial research project seminar (kick-off meeting), explaining objectives and expected results;
- a midterm seminar (mid-term meeting), presenting the mid-term reports including project status, preliminary results and future work;
- a final seminar (end term meeting) presenting the final reports including research results and assessment of possible impact on food systems and climate and future actions required.

The three seminars will be organised by FOSC. The costs for attending the status seminars should be covered by the allocated project budget. The objective of the status seminars is the monitoring of the projects funded through FOSC as well as providing networking and future collaboration opportunities. Presentations could be disseminated and shared outside FOSC.

14.12. Publishable data

A list of the funded projects will be published at the end of the evaluation process (after the funding decision). Therefore applicants should be aware that the following data from the full proposal will be published:

- Project Title and Project Acronym
- Theme and Topic of the project
- Organisation name and country of each partner
- A short publishable summary of the project

15. Quick guide "How to apply to the FOSC Call"

Pre-proposal phase

1. Check the call scope and project topic areas!
2. Check the general eligibility criteria and principles of the FOSC co-funded call!
3. Build a consortium
4. Check the National/Regional Funding Regulations of **all consortium partners!**
5. Check the application procedure
   - contact the National or Regional Contact Points
   - contact FOSC Call Office
6. Complete your pre-proposal according to the requirements in Call Text (Announcement) and national/regional regulations
   - follow the guidelines for applicants
   - **Take into acount the FOSC requirements regarding:**
     - **ethics**
     - **data management concept** (*dedicate appropriate resources for data management*)
     - **communication of project results** (*dedicate appropriate resources for activities regarding communication, dissemination and exploitation of the results)*
   - The project description should not exceed **max. 5 pages**
7. Submit your pre-proposal via FOSC submission system: **https://ptoutline.eu/app/fosc** before the deadline of **February 12, 2020, 17:00 (CET)**
   - it is possible to submit your proposal several times - old version will be replaced electronicaly by the newest version until the deadline

Full-proposal phase

(Only relevant for consortia explicitly invited by the FOSC Call Office to submit full proposals)

1. • Inform your consortium partners about progressing to the full proposal phase
2. • Contact the FOSC Call Office or the National or Regional Contact Persons if explicitely required
3. • Develop an appropriate plan for *communication, dissemination and exploitation* of the project results in accordance to the guidelines of FOSC
4. • Select an appropriate DM approach and create a data management plan according to the requirments of FOSC
5. • Complete your full proposal according to the requirements in call text, guidelines of applicants and in consideration of the remarks made by the evaluators and the national funding agencies
6. • Submit your proposal via FOSC submission system: **https://ptoutline.eu/app/fosc** before the deadline of **July 21, 2020, 17:00 h (CEST)**
   • it is possible to submit your proposal several times - old version will be replaced electronicaly by the newest version until the deadline

ANNEX 1: Data Management Plan

Data management is an essential component to the success of projects using systems/synthetic biology approaches and/or tools in bioinformatics. Representatives from academia, industry, funding agencies, and scholarly publishers designed and jointly endorsed a concise and measurable set of principles referred to as FAIR Data Principles* with the intention to provide a guideline for reusability of data holdings. Four foundational principles – Findability, Accessibility, Interoperability and Reusability– are a necessity of data management. The EC recently published Guidelines on FAIR Data Management in Horizon 2020.

Fulfilling the FAIR principles needs the use of software platforms that enable capturing, cataloguing, and annotating data, associated with well documented SOPs, and supports interlinking data from specialized, as well as local collections. Moreover, in a systems approach, well annotated models (including parameters) must be catalogued and interlinked with relevant data. Each project should have one single starting point starting at which one can find out everything about the project.

Participation in this call requires fulfilling the FAIR principles, including the use of a cataloguing platform as described above. Therefore research data and non-data assets like algorithms, tools and workflows or metadata produced in the projects funded under this call must be: (i) machine-readable (ii) citable and (iii) must be published in a registered repository and (iv) interlinked with other project outcomes in a cataloguing platform. Privacy sensitive data that cannot be published needs to be catalogued, such that the creator of the data can be easily found for possible questions and collaboration. Data that is subject to Intellectual Property for Patents needs to be recorded and published in due course.

The repository must be registered in as a "trustworthy repository" in (i) BioSharing or (ii) re3data (Registry for Research Data Repositories). For this, resources of existing community knowledge and data management platforms in Europe shall be preferably used.

No section for data management is foreseen in the pre-proposal template. However, the projects must consider already the cost of data management in their proposals. The help given to the applicants should enable them to (i) properly estimate what cost will be incurred by performing FAIR data management, and (ii) provide a section in the template for full proposals.

Building the data management plan should be based on existing check lists, such as the FAIRDOM checklist document. The checklist addresses: (i) responsibilities; (ii) types of study, data and models; (iii) volume and life cycle of the data; (iv) data and model processing and access policies; and finally (v) documentation and metadata.

Answering the questions in the checklist, applicants will identify and resolve key questions about their data, models, SOPs and associated metadata. The data management plan will outline how data flows and the requirements on data, metadata, storage and data transfer throughout the project and beyond the project.

The costs associated to the data management plan (*e.g.* travel expenditures of staff to data management training; salary costs of staff curators; costs of servers, storage, archiving and backup) must be derived from this and clearly presented.

Guiding questions include the following:

- *Generate and Store*
  - Who will generate the data/model/SOP?
  - Who will receive the data/model/SOP?
  - What does the user need from the generator?
  - Where will you store data/model/SOP?

- How much storage capacity will you need short term?
- How will you transfer it?
- How much will you keep for longer? Who is responsible for this step?
- How will the data be made available for processing?

- *Curate*
  - Who will curate the data/model/SOP?
  - How will the data/model/SOP be interlinked?
  - How is data tracked through processes?
  - How are versions of models and SOPs tracked?

- *Access*
  - Are you allowed to share data?
  - Where, when and how will you make the data/model/SOP available?
  - Which public archives will you deposit your data/model/SOPs in?
  - How will you make the project's data/model/SOPs available in a unified way through a onestop single starting point starting at which one can find out everything about the project?

In the pre-proposal phase, these questions can be answered in a preliminary fashion. While developing answers for the proposal, it will also become clear who is **responsible as a contact person**, for which parts of the data management of the project.

*http://www.nature.com/articles/sdata201618

ANNEX 2: Plan for Communication, Dissemination and Exploitation of the results

Communication and dissemination of project results is requested through **various communication routes** including scientific papers, presentations at scientific conferences, workshops, poster sessions, etc. Proper **reference** must be given to FOSC in all related publications, exhibitions, lectures and press information. Additionally, each project proposal should go beyond dissemination and envision how it will **communicate and reach out to a more general public.**

Each project has to submit a one A4 page plan for communication, dissemination and exploitation of results in the full proposal stage, specifying how the planned activities, including dissemination, communication and stakeholder interaction, will contribute to the impact of the project.

To fulfill the plan for communication, dissemination and exploitation of results, **projects must dedicate appropriate resources for those activities already during the pre-proposal stage.** For a well-elaborated communication and dissemination strategy, applicants also are advised to take into consideration the EC guidelines on "Communicating EU research and innovation guidance for project participants" and read the guidelines below on communication with a wider public.

Communication and Dissemination – why is this important in planning, developing, delivering and evaluating a successful research project?

Communication is here defined as the work you do and the effort you put into informing and engaging with the wider public so they are aware of the issue your research is addressing, the question you are posing, the methods you are using to answer that question and the anticipated outcomes. Communication is in addition to **'*dissemination*'**, the latter being focused on the production of scientific papers, posters and presentations at closed scientific congresses, and work with specialist stakeholder groups. Please include both communication and dissemination activities in your plan.

Communication activities may include activities, such as development of a website and/or app, media communications programme, social media programme, videos/podcasts, infographics/project literature, creative artwork/exhibition stands, quizzes / games / serious gaming, science fairs/open houses intended for wider audiences, meetings of targeted stakeholders, training for Consortium on aspects of communication. Please consult the national annexes of your respected funding agency for potential limitations to funding certain communication activities.

There are clear reasons ***why effective communication*** is an essential element of any FOSC funded research project:

- The funding for your research comes from public money and tax payers are interested in knowing where their money goes and that they are receiving 'value for money'.
- Communicating about the relevance of your research work and its potential outcomes to society and the everyday life of citizens will help ensure that your innovations – products, knowledge and thinking – are accepted and utilised by society – not ignored, nor opposed.
- Effective communication raises awareness of your research project and of the professionals working on it to mutual advantage, potentially laying the ground for more funding or support.

What is a Plan for Communication, Dissemination and Exploitation of the results?

It is a document that demonstrates that a consortium has clearly thought through the rationale, target stakeholders, activities, timescales, budgets and measures incl. their key performance indicators of success behind the dissemination / communications activities it will implement as an integral part of its project plan.

The elements of a Communication Plan that will demonstrate clarity of thought and planning are likely to be:

- Evidence that the whole Consortium are 'on board' with the plan and that all partners will support the actions
- Focus on purpose/objective of each selected dissemination/communication action – Who is it for? What do we want to happen as a result?
- Clarity on the messages that the project wishes to communicate overall and to specific groups
- Clear understanding of what success looks like for each action
- Description of the method to be used for delivery
- Utilisation of resources and talents within the consortium
- Realistic assessment of the potential impact of each action
- Built-in time points for review and adjustment
- Appropriate focus on internal communications within the Consortium
- Appropriate utilisation of the services and channels provided by the EC

The Plan should be able to answer the following questions clearly:

- What are the objectives of our Communication Plan?
- Who are our priority audiences and why?
- When is the most appropriate time to engage with each audience and why?
- How does our Communication Plan create synergy with the rest of the project plan?
- How do we justify the budget allocated to each of our proposed communications actions?
- How are we splitting responsibility for the resources and actions across the consortium?

Exploitation of the project results can aim at different target groups, support policymakers, and be used in industry and/or education etc., as appropriate, particularly from applied research proposals.

ANNEX 3: National or Regional Contact Points

Table to be added