

## CONSENSUS EVALUATION REPORT

### GENERAL OVERVIEW

Open Call Collection	OC-2016-2
Proposal Reference	OC-2016-2-21445
Proposal Title	<i>Impact of Nuclear Domains On Gene Expression and Plant Traits</i>
Proposal Acronym	<i>INDEPTH</i>
Review Panel	<i>2. From fundamental sciences to applications for a sustainable environment and healthy and food secured population</i>
Evaluation Status	<i>Final</i>

### EVALUATION

#### SUMMARY TABLE

S&T EXCELLENCE					IMPACT				IMPLEMENTATION				Marks
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Total
5	5	5	5	5	4	5	5	5	5	5	5	5	64

### COMMENTS

#### S&T EXCELLENCE

Soundness of the challenge

Q1 - Is the challenge relevant and timely?	Mark
<p>The proposal addresses this question in an excellent manner.</p> <p>Main strengths: The proposal addresses this question in an excellent manner. This proposal is clearly written and addresses a relevant and up to date research challenge. It addresses the knowledge gap on chromatin organisation and modulation in cellular functions and how it relates to plant phenotypic characteristics and to explain phenotypical changes in plant adaptation to climate changes.</p>	5

Q2 - Are the objectives presented clear and pertinent to tackle the challenge?	Mark
<p>The proposal addresses this question in an excellent manner.</p> <p>Main strengths: A highly interdisciplinary network in genetics, cytology, bioinformatics, mathematics, computer sciences, molecular biology and plant biology. The proposal addresses both research coordination and capacity building objectives in an excellent manner with adequately clear presentation. It proposes to make available: an open repository; recommendations for data collection and annotation; new bioinformatic tools.</p>	5

### Progress beyond the state-of-the-art and innovation potential

<b>Q3 - Does the proposal advance the state-of-the-art and introduce an innovative approach to the challenge?</b>	<b>Mark</b>
<p>The proposal addresses this question in an excellent manner.</p> <p>Main strengths: The state of the art is clearly presented addressing the lack of knowledge in respect to the effect of epigenetic modifiers, the 3D organisation of the genome being a major one, in regulating different phenotypic outputs under normal and stress conditions for plant biology. The proposal aims in utilising different kinds of expertise in computer science, engineering, mathematics, molecular biology and phenotyping in addressing the main question and expand our understanding regarding the impact of chromatin organisation in regulating different phenotypic outputs. It proposes combinatory studies in imaging (analysis), molecular biology, phenotyping and protein-protein interaction to identify the dynamic organisation of nuclear domain that is related to plant phenotypes. One goal is to make available standards for the community, which has the potential to foster the integration of distinct data sets. Additionally, it aims to build a commercial product (software).</p>	5

### Added value of networking

<b>Q4 - Is networking the best approach to tackle the challenge?</b>	<b>Mark</b>
<p>The proposal addresses this question in an excellent manner.</p> <p>Main strengths: Indeed networking would be a great approach in tackling the main challenge of the proposal since a quite multidisciplinary approach would be required to approach the research question. Creating a pan-European network would be an excellent choice and such activities are already under way for mammalian systems but not for plants. The proponents clearly identify the main fields of action and have the required competencies within the network. The major plant under study will be Arabidopsis, but several crops will also be considered, with good suggesting collaboration partners at the international level.</p>	5

<b>Q5 - What is the added value of the proposed network in relation to former and existing efforts at European and/or international level?</b>	<b>Mark</b>
<p>The proposal addresses this question in an excellent manner.</p> <p>Main strengths: Synergy effects in multidisciplinary network and international collaboration partners. Most international efforts have been formed between scientists focusing in human biology trying to understand disease outputs. Therefore the formation of a network consisting of plant biologists would be one of the first in addressing the challenge.</p>	5

### IMPACT

#### Scientific, technological and/or socio-economic impact

<b>Q6 - Does the proposal clearly identify relevant, and realistic short-term/long-term impacts?</b>	<b>Mark</b>
<p>The proposal addresses this question in a very good manner.</p> <p>Main strengths: Supporting young scientists' career development and potential to provide a new strategy in molecular breeding tools to produce crops more adaptable to environments. There is a clear presentation of short-term impacts by implementing the current proposal. The short-term impacts are well established and can be delivered within the timeframe of the proposed Action.  The proposal would benefit from certain improvements: However, the long-term impacts are too general and difficult to verify their delivery.</p>	4

### Measures to maximise impact

<b>Q7 - Does the proposal identify the most relevant stakeholders and present a clear plan to involve them as Action's participants?</b>	<b>Mark</b>
<p>The proposal addresses this question in an excellent manner.</p> <p>Main strengths: The relevant stakeholders and their distinct profile have been clearly identified in this proposal ranging from researchers and academic participants to industrial partners, with a clear focus on developing new imaging systems and approaches for plant biology. It presents a clear plan to involve stakeholders as actions' participants. This project encourages reciprocal interactions between academic and industrial factors to accelerate collaboration and mentoring early career investigators, with the engagement of biotechnology companies and breeders in the decision-making and STSM.</p>	5

<b>Q8 - Is there a clear and attainable plan for dissemination and/or exploitation of results?</b>	<b>Mark</b>
<p>The proposal addresses this question in an excellent manner.</p> <p>Main strengths: There is a clear plan for the dissemination of the network's activities aiming both scientists but also the general public. There is a strategy for the commercialisation of the technologies developed in association with the industrial partners.</p>	5

### Level of risk and level of potential innovation/breakthroughs

<b>Q9 - How well does the proposal succeed in putting forward potential innovation/ breakthroughs with a convincing risk/return trade-off?</b>	<b>Mark</b>
<p>The proposal addresses this question in an excellent manner.</p> <p>Main strengths: It is adequately presented that there is a great potential for innovation by implementing this proposed Action. Indeed, currently, there is a lack of the development of imaging tools, genomic and proteomic approaches for plant biology. Concrete identification of three potentials for innovation versus risk level. The proponents identify the major risk, failure to better define the nuclear architecture, but also highlight the relevance of this goal. All of the three issues are challengeable and important especially related to proper sample preparation in plant species.</p>	5

## IMPLEMENTATION

### Overall Coherence and effectiveness of the work plan

<b>Q10 - Is the work plan (WGs, tasks, activities, timeframe and deliverables) coherent, realistic and appropriate to ensure the achievement of the objectives?</b>	<b>Mark</b>
<p>The proposal addresses this question in an excellent manner.</p> <p>Main strengths: An excellent work plan has been put in place with a clear presentation of individual Working Groups with discrete tasks, milestones and deliverables which are realistic and achievable taking under consideration the size and composition of the network. Clear tasks in each group and active co-works between WGs. All the WGs are well organized.</p>	5

Q11 - Does the proposal identify the main risks related to the work plan and have a plan for contingencies?	Mark
<p>The proposal addresses this question in an excellent manner.</p> <p>Main strengths: The main risks have been identified and concrete mitigation plans provided.</p>	5

#### Appropriateness of management structures and procedures

Q12 - Are the management structure and procedures appropriate?	Mark
<p>The proposal addresses this question in an excellent manner.</p> <p>Main strengths: A clear management structure is presented, with appropriate structures for the management.</p>	5

#### Network as a whole

Q13 - Does the proposed Network envisage the critical mass, expertise and geographical distribution for addressing the challenge and the objectives? If not, does the proposal identify the gaps in the Network and present a clear plan for overcoming the gaps? Are mutual benefits clearly ascertained in case of involvement of NNC and IPC institutions?	Mark
<p>The proposal addresses this question in an excellent manner.</p> <p>Main strengths: The network as presented has the critical mass to undertake and resolve the proposed challenge. Participants with different expertise necessary in addressing the goals of the proposal are clearly identified as participants. Pan-European dimension including 51 proposers from 15 COST countries including 4 ITCs as well as 2 NNC and 2 IPC Institutions.</p>	5

## SELECTION

### COMMENT OF THE SCIENTIFIC COMMITTEE

SC	The proposed Action must develop and implement specific plans to increase the participation of Early Career Investigators (ECIs), number of ITCs, and to improve gender balance.
----	--