

EPINET: Integrated Assessment of Societal Impacts of Emerging  
Science and Technology from within Epistemic Networks

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**Working Paper on the Embedding  
Workshops: “Public Funding and Social  
Shaping of In Vitro Meat”**

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**Contents**

Introduction and Executive Summary.....	2
EPINET’s task with respect to in vitro meat.....	3
Narrowing down the policy issue.....	3
Embedding Workshops, Utrecht October 2013: Venue, Schedule and Instructions .....	4
Some Preliminary Reflections on What Was Achieved During the Workshops.....	9
Appendices: Individual Presentations .....	<b>Feil! Bokmerke er ikke definert.</b>

### Introduction and Executive Summary

The purpose of this working paper is to provide documentation from the embedding workshops of EPINET WP5 on in vitro meat (IVM). This documentation will be extended and analysed in the last year of EPINET, from now until 30 April 2015, culminating in the publication of our scientific deliverable D8.6 (which will include at least one academic research paper; though more are expected) and D8.3, our policy recommendations for the EC.

The working paper will briefly present the objectives and the ongoing work of WP5, including the preparatory workshop for the embedding phase in London on the 22 March 2013 and the embedding workshops themselves that took place in Utrecht on the 28 and 29 October 2013. It will also summarize the plans for the third and last phase of EPINET and WP5 as they were discussed at the Consortium Meeting in Brussels 8 November 2013.

The short version, however, is as follows: WP5 has been able to narrow down and define one central policy issue, which is **the public funding and social shaping of in vitro meat research**. We were able to gather the main research actors in Europe as well as the leading investigators also on the ethical and social aspects of IVM in our embedding workshops, and we discussed the issue with them and with research policy actors over two days. Although a careful analysis still is to be performed, we can already report one methodological and one substantive result. The methodological result is that the EPINET approach worked, in the sense that there was a constructive dialogue across epistemic networks, with mutual learning throughout the workshops. The substantive result, as we see it today, is that we see a potential explanation for the apparent disconnect between research funding and the IVM research field. We see that the narratives and imaginaries of the IVM research community as well as some of the TA visions of it – in particular the environmental analysis – are “too thin”: In particular they do not convincingly address the implications of a transition to IVM on an agrifood system level, nor the cultural and experienced aspects of what meat is. In spite of appealing arguments in terms of the reduced energy and land use of IVM and reduced climate gas emissions, IVM accordingly risks being perceived as impracticable and unappealing from both a producer and consumer point of view. It is therefore particularly interesting to work out more in detail these aspects in the remainder of WP5 in order to have a fuller account and appraisal of the prospects of IVM becoming a reality in some form or other.

### EPINET's task with respect to in vitro meat

The objectives of WP5 are:

1. Provide assessments of in vitro meat from the perspectives of different TA methodologies.
2. Provide guidelines for good governance of in vitro meat in the context of EU policies.
3. Provide recommendations for improved integration of TA methodologies in the field of in vitro meat.

The EPINET DoW states a number of research questions with respect to in vitro meat (IVM) that should be answered in the course of the project:

- Who is involved in IVM, why and how did they become active?
- How do they interact as an epistemic network?
- What role do politically engaged activist groups play in shaping the emergent biotechnology?
- How do IVM protagonists establish a communal imagination of its future large-scale application, its use and its users?
- How is this imaginary materialised and what actions, both in terms of product design and discursive promotion, are undertaken that expand the epistemic network?
- How do the scientists, positioned as insiders or outsiders of mainstream biomedical tissue engineering, frame their work and capacity in the area?
- How do imagined future regulatory hurdles shape IVM work?

### Narrowing down the policy issue

An important point of the EPINET approach is the need to *narrow down a small set of policy issues* that can work as a common point of reference in the dialogue across epistemic networks. Decisions on this narrowing exercise were prepared and then ultimately taken in an embedding preparatory workshop for the EPINET consortium on 22 March 2013 at the Goodenough Club and College in Bloomsbury, London.

The main purpose of the workshop was to settle the “policy issue” and hence the content and form of the embedding phase. Towards the end of the Working Paper we suggested “Should IVM research be funded?” as the main focus, then in a quite broad sense in the sense that:

*... this question should not be decoupled from the question of the shaping/reshaping of the technology. If we are to discuss if IVM should be funded, we should simultaneously discuss what it is that is going to be funded or not. To achieve a balanced perspective on this, we – the EPINET Consortium – would need to ask that question very broadly,*

*as indicated e.g. in the discussion on the distinction between technology and technique (purpose and function).*

The WP5 partners agreed on this definition and went on to identify the epistemic networks to be represented during the embedding workshops as well as the format and content of the workshops. It was decided to disconnect the WP5 workshops in time and place from the WP3, 4 and 6 workshops to be held in Brussels in November 2013. A natural choice was then Utrecht, not the least because so many of the central IVM actors work in the Netherlands.

### Embedding Workshops, Utrecht October 2013: Venue, Schedule and Instructions

The embedding workshops took place at the Faculty Club at Universiteit Utrecht, Domplein 29, in the room Belle van Zuylen zaal.

#### *Programme Workshop 28.10.2013*

- 1300-1400 Welcome & Lunch
- 1400-1450 Presentation of EPINET and of participants
- 1500-1550 IVM now and in the future: the scientific perspective
- 1600-1650 Ethical and environmental aspects of IVM
- 1700-1750 Concepts and rationales in biotech R&I policy
- 1750-1810 Conclusions Day 1
- 1930- Workshop dinner

#### *Programme Workshop 29.10.2013*

- 0900-0915 Presentation of Day 2 objectives
- 0915-1015 IVM, the media and the public
- 1030-1200 The main issue: public funding and social shaping of IVM
- 1215-1300 Final discussion and conclusions
- 1300-1400 Lunch

### Instructions and Preparations

A key point of embedding workshops is also a high level of planning in the sense that participants arrive with a clear sense of the purpose, objectives and contents of the workshops as well as what is expected from them. What follows, is the memo that was sent to all participants in advance, with individual instructions. In addition, the organisers of the workshop had numerous exchanges with individual participants in the days and weeks before the workshops, by e-mail and phone.

### Objective of and Expectations for the Workshop

Each EPINET workshop – in this case the one on in vitro meat – focuses on one issue of importance. The workshop in Utrecht is devoted to the issue of **public funding and social shaping of in vitro meat**. In our previous message, we wrote:

“We think this is an important issue as in vitro meat on one hand attracts a lot of attention for its possible ecological, ethical and industrial advantages, while on the other receives near to no public funding. Why is this so, and could in vitro meat be reconceived and reshaped in other ways? The purpose of the workshop is to bring together actors with valuable knowledge in order to better understand and shape European policies in this area.”

In this memo I would like to expand on the objective and our expectations for the workshop.

First, this workshop is part of a *research project*. The workshop may reach conclusions, but these are not binding for any participant, and our influence in the European Commission is limited to presenting our evidence, arguments and results. Specifically, the invited representative from EC DG Research and Innovation is invited as an *expert on research policy*, that is, to represent his knowledge and experience on a general basis, and not e.g. to give advice on possible Horizon 2020 applications.

We are all to some extent also stakeholders in our fields, but in this workshop you are all invited as experts and knowledge-bearers. We wish to achieve a discussion climate where everybody feels free also to express knowledge gaps, ambiguities, uncertainties and doubt.

For this reason, the workshop is *closed*, with only invited participants as well as the participants from the EPINET project itself.

We will not record the sessions, but EPINET researchers will take notes during the sessions for later use in the project.

In the spirit of openness of discussions, we propose the following rules:

- 1) Chatham House Rule: “When a meeting is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed.”
- 2) It might happen that a participant during the discussion wishes to share confidential information or opinions. If this happens, we propose that she or he then states that the following is confidential and not to be cited without her or his permission, and that this will be accepted by everybody unless someone explicitly says so.

Consensus is not an objective of the workshop. On the contrary, our aim is to bring into contact different and possibly opposing perspectives and viewpoints. We hope for an **academic workshop** in the usual sense of lively discussion and disagreement, to produce new ideas and arguments.

### Background for the Choice of Issue

To explain a bit more why we have chosen this specific issue for discussion – **public funding and social shaping of in vitro meat** – I would like to cite an excerpt from previous working documents in the EPINET project:

#### ***Integration between science, ethics, art and environmental analysis/assessment***

*A first tentative conclusion of the review of the state of the art of assessing the societal impacts of in vitro meat, is that the different fields of science, ethics, art and environmental analysis either already are connected, or are likely to be able to be connected. Researchers from the various fields as well as artists refer to each other in their texts, and the majority of arguments we come across, are either similar or appear commensurable. In these two senses one may claim that there already is a certain integration of the assessments, and an integration between assessments and the research and innovation context for the technology.*

*In terms of substance, the language of ethics or at least ethics arguments appears to be shared across several of the authors writing on IVM. Arguments about utility and above all the potential of IVM to reduce animal suffering are posed and/or investigated or analyzed across the field. Often, such arguments are assessed in terms of their soundness or validity. In a few instances (for instance with Driessen and Korthals) one can find other types of analysis, in which the arguments are not assessed, but used as a point of departure for a broader societal analysis (not oriented towards decisions about IVM). We see that the broader perspective of environmental analysis – for instance including the perspective of Jevons' Paradox – is not present at the moment in the scarce assessment literature, but we see no reason why it cannot be brought in on the same analytical plane and the same discussion. The same can be said about the contributions from artists such as Oron Catts, Ionat Zurr, Cathrine Kramer and Zac Denfeld and others. Their work could be interpreted as attempts to “make the invisible visible” and thereby explicate better possible societal impacts for the debate [...].*

#### ***The disconnect between IVM and research policies***

*In short, the networks that identify themselves as either proponents/innovators of IVM, or as scholars/artists studying and commenting on IVM, are in contact, and there is a level of integration in terms of what they say and what they do. On the other hand, the connection between these networks and those of public policy appears less tight, in particular in the sense that proponents of IVM perceive their work as poorly funded and poorly supported by research policies. This is an interesting aspect of this case: IVM seen as a future and emerging technology easily makes headlines in the media, but it has not made it to the research priorities. This is perceived as a serious problem*

*and hindrance from IVM R&I actors, to the extent that individual scientists are beginning to doubt the realism of IVM. We have seen two ways of dealing with this situation in the assessed literature. First, there are attempts at providing better, sounder and more convincing arguments why IVM is doable and good (notably in terms of sustainability and ethics), in order for policy-makers and the general public to change their minds. Secondly, there are diagnoses of IVM as being unattractive to policy-makers and the general public – notably conceived as the Yuck factor – and then discussions of how to shape/re-shape IVM so that it could become attractive (notably represented by contributions by the Dutch scholars van der Weele and Driessen).*

*From our overview, we may add that this diagnosis can be strengthened by going more deeply into the fact that IVM until now has not received a lot of research funding. More is to be said about the reasons for this than the Yuck factor. First, we have more to say as a Consortium, e.g. along the lines of the environmental analysis provided. Secondly, it would be interesting to listen to the reasons and arguments provided by the policy-makers who haven't been or aren't convinced by the pro-IVM arguments. This provides EPINET with a candidate for what we could try to achieve in the embedding phase of the project. To quote the EPINET DoW:*

*It is the potential for tighter integration between these three main fields of practice [policy, innovation and assessment, our comm.] ... which serves as the analytic point of departure as well as the critical (regulative and normative) goal for EPINET. (DoW p. 5)*

*In the case of IVM, therefore, it seems that it is an interesting challenge to focus on the integration between policy on one hand and innovation-and-assessment on the other.*

*[...] we believe that the policy issue "Should IVM research be funded?" is the one that (a) appears as the more important one for the actors in the context of innovation and (b) is the one for which there is a disconnect and a potential for tighter integration. We agree with van der Weele, however, that this question should not be decoupled from the question of the shaping/reshaping of the technology. If we are to discuss if IVM should be funded, we should simultaneously discuss what it is that is going to be funded or not. To achieve a balanced perspective on this, we – the EPINET Consortium – would need to ask that question very broadly [...].*

Our working paper proceeded to ask:

- 1. By which lines of development (of science, technology and society) could one imagine that IVM becomes a reality? What would it take of reshaping of the science and technology, of change in policy, and of cultural change?*
- 2. Are these lines of development realistic, and why? Are they desirable, and why? This latter question will have to be asked in a very broad way, sensitive to the framing*

*issues as described above, about the culture and political economy of industrialised livestock production and consumption.*

### Participants' Preparations

First, we hope that participants will have read this memo (if you read this sentence, you probably have).

Secondly, you are more than welcome to have our 34-page working paper from 2012 (for internal use!) and read it before the workshop. Send me an e-mail if you would like to have a copy.

Third, we hope that most of the time can be free discussion. However, we would like to ask some of you to give **short** prepared presentations and "statements". Please have a look below and confirm if you are willing to give a presentation.

Also, please let me know if you wish to propose changes, insertions, etc in the programme.

**Specific** preparations. For those who find their names in **bold**, **please confirm** (or propose changes)! For those who do not find, their names in bold, let me know if you would like to have a mini-presentation of yours incorporated into the programme.

*Monday 28.10.2013*

1300-1400 Welcome & Lunch  
1400-1450 Presentation of EPINET and of participants  
1500-1550 IVM now and in the future: the scientific perspective  
1600-1650 Ethical and environmental aspects of IVM  
1700-1750 Concepts and rationales in biotech R&I policy  
1750-1810 Conclusions Day 1  
1930- Workshop dinner

*Tuesday 29.10.2013*

0900-0915 Presentation of Day 2 objectives  
0915-1015 IVM, the media and the public  
1030-1200 The main issue: public funding and social shaping of IVM  
1215-1300 Final discussion and conclusions  
1300-1400 Lunch

### Some Preliminary Reflections on What Was Achieved During the Workshops

The first observation is the extraordinary degree to which we were able to gather the main actors in the field of IVM research – and research on IVM research. This meant that the workshops also gathered the research and innovation field as such and provided a networking event for them. Several participants expressed the usefulness of this. It should also be mentioned that the acceptance rate of the invitations sent to IVM actors was an astounding 100%, possibly also due to the fact that the EPINET group includes Neil Stephens, a sociologist who has studied IVM for years and with whom most if not all actors are well acquainted. Furthermore, the main researchers on the environmental and ethical aspects of IVM were present. More than in any other case study of EPINET, it was therefore possible to have a representative participation of the field itself.

The second observation is methodological. Although more analysis needs to be done on what was achieved and how the EPINET researchers performed, in particular the intervention style of the workshop moderator (Roger Strand), there is little doubt that there was intense dialogue throughout the workshops with very active participation of the group. There were many instances of participants asking for explanation when knowledge or reflections were presented from another field than their own. A noteworthy example can be made already from the opening session, when Strand presented the issue as public funding and “social shaping” of IVM. One of the IVM researchers then carefully and repeatedly asked what “social shaping” means, and this exchange gradually unfolded some of the assumptions behind the expression and the definition of the policy issue itself, namely a (moderate) constructivist position of believing in the possibility of “Society speaking back to Science”, as it were. The IVM researcher rightly asked and commented: “What do you mean by something slightly different? That is a political statement, is it not?”

The first day continued with a round of mini-presentations from the IVM researchers, presenting the natural science. A general observation to be reflected upon and analysed further, was the tonality of the presentations – the presence or lack of optimism in the venture of IVM, with the exception of the presentation around the recent success of the “in vitro burger”. Several of the IVM researchers spent considerable time of their presentations outlining the non-trivial scientific challenges and problems involved in IVM research, including, for instance, the challenges of upscaling laboratory processes to the industrial scale. Also, others talked about how IVM research is perceived by colleagues and there was an interesting discussion on how to interpret “a scoffing smile” from other life scientists.

Among the many topics discussed, perhaps three may be emphasised for the final phase of EPINET. First, there is the dimension of public perception and the cultural understanding of what meat is. The workshop uncovered differences in perspectives that could be important to understand the current lack of acceptance and funding of IVM research. Observe the following exchange from the workshop:

*A: “IVM is basically a highly technological answer to what is basically a cultural problem [...] The promise is not scientific but rather a desire. Be honest about what it is.”*

*B: “Cultured meat is a desire. But meat as it is today is also a desire...we need cultured meat as much as we need meat as it is now... I like to ask everybody what’s the most promising avenue for finding funding.”*

*C: “The question ‘what is meat’ is simple.” [...]*

The point here is not to say that some participants have a too simplified notion and others have a more sophisticated notion. Experts on tissue life science have their own highly sophisticated understanding of what “meat” is – from a biological point of view – but this understanding is quite different from the cultural, anthropological and sociological understanding of what meat is, that is, what meat *means to people* and the role it plays in their lives. It may be that IVM proponents have underestimated this disconnect of *knowledge*.

Secondly, there is the issue of the environmental impact of IVM. While some have pointed out and documented obvious environmental advantages of IVM – in terms of land use, climate gas emissions and energy use – the UAB EPINET partner has made evident that a multi-scale, multi-level analysis is required in order to draw robust conclusions on this issue. This was discussed at the workshop, and it was connected to the issue of the resistance from the agri-food sector, which IVM researchers may have interpreted as a conflict of interest (from the “meat lobby”) rather than as rational concerns over the efficiency and integrity of the food production system. For instance, from a multi-scale point of view it may be argued that meat production is also a way to redirect and utilize crop products that otherwise may have lacked a market. Some might from a normative point of view find such arguments untenable or even absurd (in the sense that things “ought not” be that way), but from a descriptive perspective they may still have explanatory value.

Finally, the representative from the EC DG RTD challenged the participants’ notion of what it means to fund research. He explained how one from a governmental perspective considers a whole range of instruments and measures in order to support research and innovation, much broader than simply “funding research projects”. He also explained what kind of knowledge or at least solidity of visions and imaginaries that are expected from the R & I sector in the context of the various instruments and measures.

In sum, we see a potential explanation for the apparent disconnect between research funding and the IVM research field. We see that the narratives and imaginaries of the IVM research community as well as some of the TA visions of it – in particular the environmental analysis – are “too thin”: In particular they do not convincingly address the implications of a transition to IVM on an agrifood system level, nor the cultural and experienced aspects of what meat is. In spite of appealing arguments in terms of the reduced energy and land use of IVM and reduced climate gas emissions, IVM accordingly risks being perceived as impracticable and unappealing from both a producer and consumer point of view.

### Moving Into the Assessment Phase

What remains, is to carefully analyse the results of the workshops, within the EPINET Consortium and to some extent in dialogue with its participants. Additionally, there is ongoing assessment work among various partners that will be completed in the year to come, also leading to scientific publications. The Consortium has not made a final decision on format of scientific publishing. One attractive option is to work for a book volume or a journal special issue, building upon the many nicely complementary presentations during the workshops. This could become a volume that gathers the natural science of IVM in an interdisciplinary dialogue with the assessment of IVM research and policy by a number of research traditions from the humanities and social sciences – and that would be a unique accomplishment. Options for such a volume are being sought out and discussed at the time of writing.