# Project work on Innovation and Sustainable Development

*This document is a template for you project write-up, and also a guideline on what you should look for when taking your notes for your thread in the discussion forum. This thread will be your collected work during the course. It will serve both as a task showing that you have taken the module and as a notebook for your final write-up.*

*The document has two parts:*

* ***A. Project Document template****.*
* ***B. Instructions to the Project Template***

*The template provides you with a form for the project document. It gives you a max number of words for each of the items. It is recommended that you follow the outline, as you will be exposed to various forms to fill in your careers. Take this as an opportunity to practice on adapting your ideas to a format someone else has decided. You may choose another form, but you must explicitly show that you have considered the elements included in this template. Given the different type of project you will write in different style. Make sure you get your hands on a few documents that you could use as examples and imitate from. Please note what is written at the end of this manual about how to use an academic ethos and references. You find the instructions below .*

*You find suggestions on what you may consider when you are picking cherries from the course modules. The suggestions are there for your support, and as an introduction to what may be considered in such discussions. You are free to go beyond and aside of these, as long as you stick to the topic and can anchor your thoughts in the literature provided in the Studyweb. If you use other literature, make the references clear (full reference on author, year, title, source). Please also indicate page number. Make it a habit to take notes of these details while reading.*

*Please note that the first edition of this template and instruction only consider the first three modules in detail. There will be new editions uploaded before the next module starts. Your questions on the document will be essential for me. I will make improvements according to the issues you raise.*

*All instructional text in italics should be deleted before submission. You should also cut out the instructions at the end of the document.*

## A. Project document template

Name of project

Name of student

[Type](file://localhost/Users/tkj/Dropbox/S%C3%B6dert%C3%B6rn/Kurser/F%C3%B6rslag%20innovationskurs/Project/Project%20work%20on%20Innovation%20and%20Sustainable%20Development.docx" \l "Type) of project: (tick the box next to your selected style)

(*Please look in section B Instructions to the Project Template for explanations to the Type and approaches)*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Scientific approach | | Management approach | | Innovator approach | | Governance approach | | Journalistic approach | |
|  | Research essay |  | Assessing idea |  | Project idea |  | Analysis of Innovation system |  | Populari-zation of science |
|  | Research idea |  | Evaluating innovation project |  |  |  | Analysis of Innovation policy |  | Explaining innovation to a wider audience |
|  |  |  | Promoting innovation |  |  |  |  |  | Specifications for a website |
|  |  |  |  |  |  |  |  |  |  |

## Abstract

To be added in the final write-up, maximum 100 words

## Summary

To be added in the final write up maximum 500 words

## Pitches

To be experimented with during the course

### Slogan

(a one liner capturing the main idea)

### 3-minute manuscript

(the sales pitch you would do when presenting to financiers, top management etc.)

### Logo

(not mandatory, but a catchy graphic representation of the project is nice)

## Sustainable Development

Max 2000 words

*Here you should present how your project addresses sustainability, development and how you use the sustainable development goals (that is your translation of them to the situation you are dealing with in your project)*

### Sustainable Development Goals the innovation project aims at:

*Here is a chance to discuss how you perceive the integration of the SDGs. You may, for instance, use the following to discuss about interdependencies between the goals in relation to your project theme.*

* Main goal and targets:

*(explain briefly why and how)*

* Conditioning goals and targets:

*(explain briefly why, how and to what extent they are conditions)*

* Goals and targets at risk from reaching the mail goal in the situation you selected:

*(explain briefly why, how and to what extent they are at risk)*

* Risk mitigating goals and targets:

*(explain briefly why, how and to what extent they could mitigate risks emanating from your main goal)*

* Goals and targets that may act in symbiosis with you main goal.

*(How would simultaneous work on these goals facilitate their mutual fulfilment?)*

* Contributes to goals and targets:

*(explain briefly why, how and to what extent achieving/approaching your main goal may contribute to the success for another goal)*

### Describe the contributions to sustainability:

*(in other terms than the main Agenda 2030 vocabulary)*

*Suggestions to look for:*

#### Social effects?

#### Economic effects?

#### Environmental effects?

#### Integrated effects?

### Describe the conditions for sustainability (challenges, potential conditions, constraints, requirements)

*Suggestions to look for:*

#### Political will

#### Social conditions

#### Economic conditions

#### Environmental conditions

#### Technological conditions

## Innovation

*(Max total 1500 words, )*

*(Make sure to use the vocabulary and concepts you learn from literature. Indicate clearly when you make your own interpretation/adaptation of the concepts as contextualizations to the situation your are describing)*

### In which ways is this an innovation?

*(first, use your own words)*

*(then, use OECD Oslo manual 2018 vocabulary)*

### How would you characterize the innovation?

*(is it a social innovation, technological, environmental, a product, a process, an artefact, a method, a bundle of several characteristics ?- Explain why you choose the characterization)*

### What challenges is it addressing?

### What are the news or the significant improvement

*(new to the world or in this situation?)*

*(how does it differ from what is already on the shelfs? How do you argue that it is not a ubiquity?)*

### What is the potential use?

### Who are the users?

### Who are the beneficiaries?

### Who are the losers or the opposition?

*(Is the project potentially a disruptive innovation? Could it shift power balances? Does it put peoples´ current job opportunities at risk? Etc.)*

### What kinds of values are created?

## Innovation systems

*Max 2000 words*

*Innovation systems is a focal device, as Lundvall says. This could be interpreted in various ways, but to me it is an approach to decide what to look for when analysing opportunities and obstacles for innovations.*

*The NIS (National Innovation Systems) relates mostly to the policies and governmental functions for promotion and funding of innovations. The litterature on NIS, exhibits a wide range of policies that could be included, policies on research funding, on education, industrial policies, transport etc. Which policies that matter depends on the type of innovation considered. Which is why other authors have preferred to talk about technological innovation systems (TIS) that focus on what makes opportunities for a specific technology. There is also recent literature that is talking directly about Social Innovation Systems, SIS, which I did not include in the mandatory read. The function approach in the TIS can also be applied to the SIS.*

*Regional Innovation Systems RIS, is a way of describing the conditions that are required for innovations to prosper in a region and contribute to its development in terms of income and job opportunities mostly.*

*Along with these there is the more limited/ focused approach of the Triple Helix and the complimentary approaches of the qudruple and quintuple helix.*

***So for your project, think of the following components and how they would affect the opportunities for success. The questions are wide in scope, partly overlapping, so you don't need to answer them in a linear mode. Rather use them to think "around" in you project and find a way toshow that you have them considered.***

### The main actors in the selected country for the field of the innovation project

* This could be the main industry structures, or the specific ones for your project. Who would produce the innovation or the equipment used to produce the innovation. Please note that also service innovation often depend on equipment to be delivered. (A waiter cannot bring you food if there are no plates, a doctor cannot listen to your heartbeat without the stethoscope)
* The research institutions that could provide knowledge on your task, or the libraries, on-line resources etc. Whee else could you find people wth the expertise needed? In companies, in NGOs, officers in the municipality?
* Who could provide funding for the different steps in the innovation process. It is often said that it is relatively easy to get funding for the development of the idea (research funding, seed funding etc) and for the stage when the innovation has proved to be commercially viable (investors would like to share a bit of the cake). However, for the hard part, during experimentation and testing, putting up the production line, there are rarely any fund any funders in the queue. So how about crowd funding? Or the funding from enthusiasts?
* The end users - can they be involved in the innovation process? This is very much done in the open innovation approach, either in a direct way or using on.line methods for communication (We will read more on this in the grassroot module)
* For your specific project you may find other types of actors important. Could an environmental NGO play a role in the innovation process? Would a municipal department be the most important collaboration partner?
* Look in the literature for other examples of actors.

### The main policies or legislations in the selected country for the field of the innovation project

This item relates to how you could find political support for the proposed innovation, how to formulate arguments and make advocacy for the innovation. The TIS function talks about it as legitimacy of the innovation. Also included is the safeguarding that the innovation does not break laws or interfere with governmental development plans.

* Many countries today have an innovation policy, sometimes connected to the Science system, sometimes more linked to industry and Trade. So what do they outline?
* Innovation and learning or closely connected, so what do education policies say and how do they connect to the knowledge society required for a prosperous innovation culture
* Policies on industrialization and trade often give hints on where governments are expecting
* Sector policies, such as food and nutrition, agriculture, health, environment etc.

In an analytic approach, you may find that some policies are conducive to the idea while others are obstructing. You may find gaps where no policies cover the problem your selected innovation is addressing. When checking for how policy directions have materialized, you may find that not much has happened.

Such findings propose that one of the most important innovations may relate to improve the system. Which is why there now is a trend on "Systems Innovation".

Note that policies exist at different governmental levels, they may be closer to government, relate to legislation, they may be instructions to authorities and governmental agencies, they may be regional or local policies.

**For your project - note that policy analysis is a too demanding task.**

**Select one (1) policy to refer to as an example, pick what seem relevant to your case.** (If it is the innovation governance you are looking for, you may select more than one)

### Existing and Required functions in the innovation system for the innovation project

This question partly overlaps with the others. Read Bergek et al for instructions. I have found their TIS functions to be the most accessible and easy to work with. We find here the importance of ***directions of search***, something you have done in the exercises with the SDGs. It would be possible to supplement that with looking into the policy documents as advised in 3.2. Doing that exercise could also add to your response when it come s to ***legitimacy***. Having done the exercise on 3.1, you could start defining who to include into the functions of ***Entrepreneurial experimentation***, ***Resources***, and ***External actors.*** And maybe also the ***Market formation***.

### Existing or potential Triple Helix collaboration

The Triple Helix approach can be seen as a tool for the setup on collaborative innovation projects. It could be a way of thinking on how to do the TIS function "***Knowledge Development***". In the knowledge society, universities and research institutes play an important role. However, they are not the only knowledge resource. Much of the experience on working with the Triple Helix approach shows that it works best when the companies also have their own research departments. So the question is how to do a Triple Helix when you are working with small business, social entrepreneurs or disruptive business ideas? How can you access the knowledge needed? How will it be made available? We will look more into that issue under the module called Universities.

**So for now – Include some ideas on what type of knowledge you think is needed for the innovation in your project. And from where you think you/the innovator could get it?**

The Triple Helix is about how to build the interaction between academic institutions, business and the government. The ideas took the discussion on university-industry linkages to a new level by including the public sector institutions in the collaboration. While the general image of the Triple Helix says Government, the practice often include various public agencies. In the health sector, one example would be a company for medical technology working together with an academic institution and a hospital around an innovation. The Swedish energy system ( Hydropower and Nuclear power) has been built in a Triplehelix constellation with a few major technology suppliers, Academic research on electro-physics and- technology in cooperation with the governmental company Vattenfall and, more recent, the Energy agency. In these cases the role of the public sector has been that of procuring the innovation.

However, the Triple Helix collaboration could also lead to policy changes as it creates a better channel for academia and business to address policy impediments to the innovation.

**So for you to ponder: Would such a collaboration be advantageous for you project? If so, How?**

### Possible quadruple or quintuple helix approach?

The Triple Helix has been much criticized for being too limited and exclusive. For innovations to succeed in reach media could play an important role, and indeed has done so over the years. Go to the shelfs in a store selling magazines and you will see the thematic plethora, all pushing products in particular nishes from linucx to yoga and outdoor life. **Could media be an important partner for the innovation you are analysing? How?**

One particular criticism, form Lundvall to Etzkovitz, has been that trade unions have been excluded from the3H collaboration model. Experience shows that when it comes to process innovations in industry, trade unions representing the workers engaged in the process may contribute important ideas for the improvement of the process. On the other hand, there are also needs for the trade unions to guard that the new process innovation is not detrimental to their working conditions or to the job opportunities itself.

The Qudruple Helix appraoch is an attempt to include media and civil society organizations in the collaboration. In a sustainability perspective, it would means also to bring in community based organisation and environmental activist groups in the discussion and innovation process.

**To ponder: Which (type of) organizations would it be good include in the innovation project of you project?. What could they contribute and what would the gain?**

The quintuple helix approach could be seen as a post-humanist view as it recognizes that non-human entities also play a role in the innovation process. This may sometimes be a hard nut to crack. Non-human covers both the human made artefacts and the phenomena of nature. ONe way to think about it is that nature puts up boundary conditions, through physical laws and biological functions. Not considering the boundaries of physical laws in the innovation of a technological artefact may show immediately as the prototype simply does not work as expected. Climate change shows that we may cross boundaries for a long time but there are repercussions on even longer terms. And the transformation of the detrimental production system is difficult because so much infrastructure is already put in place, and hence create boundaries to the possible innovations that could take us away from the situation. So non-human phenomena definitely matters, but the question is how they can be considered in an innovation process:

* **Could you use the quintuple helix approach in your project? How?**

### Opportunities for scale-up

The innovation system may be conducive to scqale-up or may lack of components that could assist the scale up and replication of an innovation in other contexts.

**Give some thoughts on what could promote the scale-up or replication of the innovation considered in your project?**

## What makes innovations and innovation systems for SD special?

With critical knowledge about innovations and innovation systems it is time to reflect on what these concepts means in light of sustainable development. In general terms we can look at ***strong*** or ***weak*** sustainability, if we are guided by the risk of trespassing the planetary boundaries (Limits to Growth), or if it is the roots in the sustainable development(“adapted business as usual”) paradigm that points out the directions of search.

Innovation can be defined with a limited scope on technological artefacts, or on social innovations, but also as triggers of change in wider socio-technical or socio-ecological systems. Innovation systems are what facilitate innovations, through laws, policies, funding mechanisms, knowledge resources, practices and infrastructural investments etc. As innovations are political, they are affected by the choice of ambition (strong or weak sustainability) and how the different elements and interactions in the innovation system interpret this choice.

Innovation systems can be understood as selection mechanisms that guides the ***direction of search***, how ***knowledge development*** can be organized, what would be considered as ***legitimate*** innovations from political, ecological, social or economic perspectives. In turn, this set up the challenges for finding ***resources*** for an innovation project and opportunities to conduct ***entrepreneurial experimentation***. The innovator´s choice of ***external economies***(partners) and ideas of ***market formation*** is of great importance to the possibilities of transcending a business as usual approach in the dominating structures of the innovation system.

Sustainability challenges the recent ideas of innovation systems as facilitators of national competitiveness and economic growth. At least the social and ecological dimensions have to be added. In some interpretations the political dimension also get a higher weight as users are involved, not only to define the commercial opportunity of an innovation, but also to have the innovation process meeting social needs and environmental concerns.

The task for you, as you study the viability of an innovation, is to look for the aspects that will be special from the perspective of sustainable development. Below follow some suggestions on what to look for, following the seven functions in the TIS approach. You may have considered these in the previous module, but now I would like you to dig deeper into what is special when it concerns sustainability?

**Finding the potential for change using the TIS seven functions approach**

**Direction of search**

* In what ways could the innovation under study create opportunities for change towards sustainability?
* What is the scale of potential changes that the innovation idea addresses?
* Does this require a radical innovation or is it good enough with incremental?
* Do you look for innovations that mitigate a problem or innovations that shift away from the problem?

**Knowledge development**

* Will it be based on scientific or technological knowledge (STI) or will it be built on experiences by doing, using and interaction (DUI). Maybe a combination?
* Will it require further research or can existing knowledge be adapted?
* Which partners are needed for knowledge development? Will you look for partners within a Triple or a Quadruple Helix?
* Could a Quintuple Helix provide for more substantial learning?

**Entrepreneurial Experimentation**

* In what ways can experimentation be done?
* Do you have to consider ethical considerations (on human, social and environmental aspects) in the design of experiments, tests and prototyping?

**Resources**

* What kind of resources would the innovation project need?
* Where would you find resources for the innovation project, considering it´s potential for sustainability? And considering its potential as disruptive?

**External economies**

* Beyond the core group of partners engaged in the innovation project, what kind of external partners would you need? In traditional innovation projects this often refer to business partners such as subcontractors providing inputs (raw materials, machinery and tools), marketing, PR –firms, distribution channels, transport companies etc. In the case of sustainability, maybe engaging grassroots will be required? Or other partners in a more circular economy?

**Legitimation**

* How can the innovation be justified? Not only as it potential good, but what kind of evidence would be needed to show impact in relation to sustainability?

**Market formation**

* Defining a group of early adopters is crucial to any innovation. This group may be engaged to different extent, as co-producers or “beta-testers”, as focus groups etc. The findings of how this group adopt and/or adapt the innovation is what could lead further to a wider use of the innovation and coming closer to the intended change if such has been defined. In innovation projects, the first step of forming such a nursery or defining a niche is called a “testbed”. Thinking of a context where the innovation could be tested is crucial for the potential of implementation. In what situation could “your” innovation project be tested for viability related to sustainability?

## Innovations in Systems: Some possible thoughts on your project

In this module, Innovations in systems, the task is to understand the complexity of the context where the innovation you are studying is situated. In brief, it is about understanding the challenges the innovation have faced, or might face, on it´s winding road from idea to utility. My strong recommendation, is to use some kind of systems thinking to be able to grasp complexity.

The main theoretical concepts in this module has been Socio-technical systems and Social-ecological systems. Like other system concepts, for instance the innovation systems concept,  they may be hard to grasp and demand quite a lot of imagination. Both concepts have been developed to assist management, of technological change in the first case and for management of natural resources in the other case.

Similar to the concept innovation system, you have by now seen that there are various interpretations and understandings on what´s involved in systems, the purpose of the system, and how they work. As a consequence, you will have to pick and choose what is useful in your case.

Why do you then need to look at these definitions of systems? Would it not be enough with the innovation system? My response to that would be the following:

* The study of innovation systems aims at understanding what type of elements in a society that **promotes innovation** – that is, what facilitates an idea to be put into use. Thus they relate more to the context in which the innovation is developed, usually in universities or firms getting some kind of governmental support.
* In the case of innovations, studying social-ecological and socio-technical systems relate to the **opportunities for** **diffusion of innovations** by providing insights to the context in which the innovations are going to be used. Theories on socio-technical systems provide lenses that may help us see how cultural and social dimensions link to technology. Theories on social-ecological systems do the same for human-nature relationships. What in these systems are related to challenges, barriers or opportunities for the innovation to come into use and to solve the problem in focus? What might come in the way of the intentions behind the innovation, or might derail the original intention into becoming something else? For good or for bad?
* Innovation systems may be part of or cut across the other two types of systems. There are several overlaps between the approaches, you find the same type of elements in all of them. Thus, it is important to think of the analytical purpose of the system types, to avoid confusion but also to look for possible synergies that make it easier for you to anlyze the linakges between innovations and sustainability.

The Multilevel perspective approach is another concepts that have become fashionable in innovation and transition literature. I am personally not too fond of it, find it a bit too simplified, but it is good to know about it. My very rough interpretation, even more simplified, is that ”regimes” are what people (most or some with power) think about technologies and technological development. ”Landscapes” in turn is what goes on in the real world and ”nisches” are the attempts to come up with alternative solutions or technologies, often as responses to changes in the ”landscape”. You may recognize this part of the thinking from the ideas on Technological Innovation Systems, where nisches are the arenas for development of new techologies.

Here are some suggestions for questions you can ask related to you project. I have divided them into the concepts, but also thrown in MLP questions and a question of path dependency.

For this part of the project write up I recommend a maximum of 2000 words, even though it is a huge topic to cover.

## Socio-technical systems

* What kind of institutions (in the sense of laws, regulations, policies, strategies, routines and habits or even wider ”the culture”) do you think are playing a role in managing the innovation you are investigating?
  + Which institutions could be said to represent the ”regime” – maintaining a status quo or counteracting transitions/transformations to sustainability?
  + Is the innovation you are investigating representing a nisch? And what institutions or institutional changes would be helpful to promote the nisch?
  + What kind of changes in the landscape are influencing the development of the nisch?
* What kind of organizations (in the sense of arrangements of peoples like governmental agencies, firms, municipal departments, civil society associations, etc) do you think are playing a role in managing the innovation you are investigating?
  + You can ask similar questions as in the previous question.
* What type of interactions, related to ”your” innovation could you identify between institutions, organizations and individuals on the one hand, and technologies and the way of organizing people on the other hand?
* Can you identify any type of path dependency in the set up of institutions and organizations that relate to the innovation you are studying?

## Social-ecological systems

Huntjen defines the challenge of  Transformative Social-Ecological Innovation as

‘systemic changes in established patterns of action and in structure, including formal

and informal institutions and economies, that contribute to sustainability, health and

justice in all social-ecological systems’. His picture on the dimensions included in a natural social contract may help you to define which features of a social-ecological systems that are involved in your  investigated  innovation.

You may also pick from Ostrom´s General framework (Interactions between resource systems, governance systems, resource units, and users, and the resulting outcomes of these interactions). This framework is then further developed in the article by Hinkel et al. The article on Social- Ecological Innovation and Transformation shows ways of using the framework, spiced with various other considerations from the social sciences on socil organization and technologies. Here, the main focus in how to innovate for making better provision of eco-system service to society.

* You may ask similar questions as above about types of institutions, organizations and interactions that relate to the innovaiton you are investigating.

Finally what inspires you from Huntjen´s Chapter 4? Pick some items.

## Knowledge for Innovation

This two-week module on Knowledge for innovations can be integrated in your project in various ways. To find a general way of addressing knowledge might be difficult as it depends on the focus of the project and the choices of approaches when it comes to definitions of sustainability, innovations, innovation diffusion, innovation system and the position of the innovation within socio-technical and social-ecological systems. The most viable way would be to think along the generic questions, why, what, when, who, and how. How are your responses to these questions to be formulated if the ambition is to promote learning throughout the innovation process?

## Why?

Why is knowledge needed? Why would the success of the innovation be dependent on new knowledge or new combinations of existing knowledge? Why may there be gaps of knowledge that need to be filled? Why may knowledges in this context be situated?

## What?

What kind of knowledge is needed? To respond to that question you may use the ideas on different kinds of knowledge used in the literature.

* Is the innovation mostly dependent on **Science driven knowledge**? Or is it more dependent on the **Doing-Using-Interacting** type of knowledge generation? Or are combinations of the types need at the various stages or loops in the innovation process?
* **Local or Global knowledge**. Here you may find the “Forms of knowledge -article useful”, but in some cases the articles on knowledge in developing countries, on traditional knowledge, and on indigenous knowledge would give you more guidance on how to position your studied innovation in the field.
* Know-what, Know-why, Know-how, Know-who**.** This list of different types of knowledges may be very helpful, and refer to different loops of the innovation process.
* Tacit of codified.Is experience more important than the search of research articles or manual? Or is it the other way around? Maybe the experience based knowledge needs to be questioned, because it risk to act as an impediment to sustainability?

## When

Asking the question “when in the innovation process” what knowledge need to be applied is helpful way of sorting, and getting a better understanding of the innovation process. Here it is useful to look back at the reading on innovation diffusion. It is also worthwhile to look at the functions described in the TIS (technological innovation systems) approach.

## Who?

Who is going to provide knowledge or the innovation in the different stages or loops. You can get some help on who from the National Innovation systems approach, listing the different actors engaged in the innovation process. Or use the different Helix approaches to define which actors that needs to be engaged in the different innovation loops.

## How?

How should the different actors act if they were to be responsible for your thinking on the Why-, What-, When-questions? By doing so you would be setting up a kind of normative framework on how knowledge should be applied for innovations the promotes sustainability.

When studying an existing innovation you may get information on how they actually did act. If so, you may be able to identify gaps between you normative framework and the actual events? If you cant find that information, you may guess from the outcomes what could have been missing or where the innovators were successful.

## Remember

Pick and chose from the questions above to fit with your project. The listing above are suggestions only.

## Democratizing Innovation

Understanding how innovations can be democratized is not straightforward. In traditional thinking, success of innovations depends on how they meet market demands. Von Hippels exploration of how users modified products to better fit the purposes contested the rough measure of demand as an indicator of innovation success. From chapter 11 of his Free Innovation, we learned about other lenses, where some of them are actually the business sectorsadaptation to the fact that users want involvement at various stages of the innovation process. Other lenses are more signs of customer or citizen responses to innovations that do not sufficiently fit into their realities.

With an increasing concern about the role innovations should play for the sustainability goals, the ideas of democratic or inclusive innovations becomes more important, and also more complex. As we have seen previously, situated knowledges (local, politically, socially or economically positioned) are important for the success of innovations. Hence, innovation processes must increasingly be inclusive and conducted in democratic ways.

Democratizing innovations requires a rethinking of innovation systems, as regards which actors to include and what kinds of relations that needs to be built between the actors. It also means that some of the policy instruments promoting traditional innovations may be challenged, changed or supplemented. The TIS function of “Legitimization” would likely have to target much wider audiences than in the original article.

There are hints in the literature of this module of what the complexity of democratization looks like and how inclusion and democratization could be promoted. Your task now is topick from these hints to respond to some very general questions. To guide and finetune your responses you could use the simple framework of asking Why, How, What, Who, When - questions:

1. Why would inclusion and democratization be important?
2. What would democratizing mean in relation to the innovation you are studying?
3. Who needs to be included for the innovation to be successful?
4. How and When would they be included?

In the project paper you are expected to develop and argumentation on your interpretation of if, why and how democratization matters.

## Managing innovation challenges and responses?

This final module is there for you to get some ideas on how changes rrelated to the innovations you are studying may happen or did happen.

It is an opportunity to both get new ideas on what could make changes happen but also to take stock on what you read before.

Here is a tentative plan for what you could think of before the at the seminar and in your project paper:

1. Which ideas did you find useful in the readings for week 15-16 module. **Start by making a list. Then go through the items below to develop arguments on how the innovation relate to change and what facilitates or hampers the changes needed.**
2. How do you relate those ideas to
   1. Sustainable development
      1. Agenda 2030 and the SDGs
      2. Debates on weak or strong sustainability
      3. Transitions or transformations
   2. Innovation
      1. Technological – Social
      2. Incremental - Radical – Disruptive
      3. Innovation process
      4. Innovation diffusion
   3. Innovation Systems
      1. 3-4-5 Helixes, how will these ideas help to bring about change?
      2. Which functions (TIS) help/are most important to realize the innovation from a change perspective
      3. Funding for change
   4. Wider systems
      1. Obstacles to, or opportunities for, change in the social-ecological system or in the socio-technical system
      2. How can you relate change to landscapes, regimes and nisches?
   5. Knowledge for Innovations
      1. What knowledge makes the change happen?
      2. Knowledge about what?
      3. Types of knowledge
   6. Democratizing Innovation
      1. Which models for democratization and inclusion could make/ did make change happen?
      2. How can democratizing innovation be strengthened?

### The write up

Provide an summarizing discussion on why your studied innovation is important to sustainable development, the likelihood that it will contribute to sustainability and how that likelihood could be promoted.

Think of it as if you were going to persuade someone to:

* invest in the innovation, or
* promote the innovation, or
* participate in the innovation process or diffusion

or

* As a critical assessment of what lacks in the innovation, innovation process or innovation diffusion

## B. Instructions to the Project Template

Here you find guidelines containing both instructions and ideas on what to consider when writing up your project using this template. Mandatory tasks are put in bold text.

### Name of project

You give your project a name. You may already have one or it may come to you during the course or in the final write up

### Type of project

At least in the final write-up **you will have to decide what type of project you are doing**. This is because you must frame it in a certain style of writing. It is also because you will take a specific perspective on innovation and sustainable development depending the type. You may take the perspective of a researcher on innovation for sustainable development, of a manager in an agency promoting innovation, or the perspective of a innovator. There is also the possibility of have more of a governance approach, where you analyse policies or systems for how conducive they would be to innovation and sustainable development. Or, even a possibility to try out writing to a wider audience in a journalistic approach.

Below, find some guidelines for the respective approaches. In the table at the top of this document you see these categories and some suggestions of subtypes of each. There are also blank cells under the different approaches where you might enter your own idea of a subtype.

Whichever approach you choose, you should get hold of a document written in the selected style. Then you imitate the style – not the text.

#### Scientific approach

If you go for a scientific approach you will need to anchor your writing clearly in academic discussions – that is responding or problematizing one or more of the articles you have read during the course.

You can write an essay where you discuss theory from a selected practical example. Or you may write an essay where you contrast different theoretical perspectives. Etc.

You may also use your project to write up a research idea – for your bachelor or masters thesis. Using theories to formulate your own research questions or approach related to the topic for your thesis is an opportunity for the project document.

#### Management approach

Think of yourself in a role as an officer in a governmental or municipal agency, in a company or a non-governmental organisation. Here you may get the task of assessing, evaluating or guiding innovation projects. You may also get the task of setting up instruments that would promote individuals or organisations to innovate. In such situations, how would you write a memo?

You should keep up an academic ethos, using, both academic and non-academic sources to make your points and underline you argumentation. This has not always been the way that agencies work in memo writing. With increasing co-development between different types of partners, it will be increasingly important to maintain the academic standards of writing. However, the style should also be more open for non-academic readers, which give you a balance to strike.

#### Innovator approach

As an innovator you would be writing in a style where you try to pitch you project and make it seem attractive to possible investors or collaborators. You should show that your project idea is well thought, based on a solid ground, with academic as well as references to technical and policy documents.

#### Governance approach

If you are more interested in the politics of innovation and sustainable development you may want to make an analysis of how innovation systems could be more conducive or how innovation related policies could be improved to cater for sustainable development. This style would typically give definitions, show casual linkages and indicate directions and recommendations. As you may see from the literature, innovation related policies, may be almost anything. A couple of years, ago I did an analysis of how “innovation” was perceived in different sector policies in Rwanda, and found the concept occurring in almost all of the sector policies. In some cases it was explicit, in some well defined and in others just a keyword. Anyone interested in writing in this style are welcome to ask for a copy of this report.

#### Journalistic approach

The inclusion of media and journalists is one of the ideas in the quadruple helix approach presented under the “ Innovation, Innovation systems for Sustainable development module”. Using the journalistic approach is one way of testing your abilities on explaining in clear language to a wider audience. You need to show that you are faithful to the essence of the scientific ideas you present. References should preferably be inserted as endnotes, not to disturb the text flow, but they are mandatory also in this approach.