

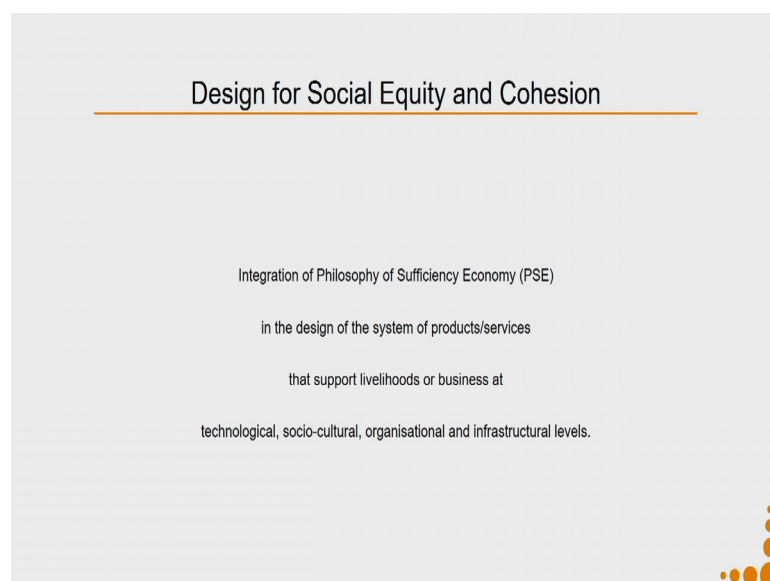
System Design for Sustainability
Prof. Sharmistha Banerjee
Department of Design
Indian Institute of Technology, Guwahati

Week-9
Lecture - 03
Sufficiency Economy Philosophy applied to Sustainable PSS Thinking

Hello everyone. So, now since we have finished the methodology for sustainable product service system design. We will today talk about sufficiency economy philosophy, and how can we apply it to sustainable PSS thinking. So, you might remember this particular terminology sufficiency economy philosophy, when we were discussing about evolution of sustainability from somewhere around 1960s till now across the various global platforms.

So, we spoke about the sufficiency economy philosophy as a philosophy, which comes from Thailand. The purpose of this particular lecture is not to get into details of this particular philosophy or its application into a design, but take this particular lecture more like it will help you to know about a completely different kind of an approach, which can also be used for sustainable PSS thinking. So, when we go through the whole lecture, you will come to see how it is how starting points are little different, but it is still a very good very appropriate method for sustainable PSS thinking.

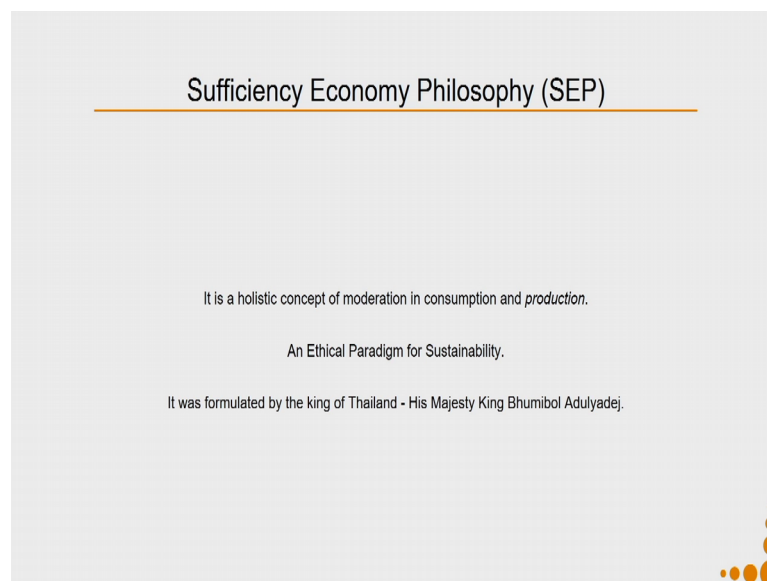
(Refer Slide Time: 01:54)



So, this method can be put into the category of design for social equity and cohesion. Because the main aim the starting point of this particular philosophical approach is that one should be able to achieve social equity and cohesion, and thereby sustainability through that means. So, integration of philosophy of sufficiency economy, in the design of the system of products or services that support livelihoods or businesses at, technological, socio-cultural, organizational and infrastructural levels.

So, when we go through this particular lecture, you will see that we have a slide on certain misconceptions. So, there are certain misconceptions regarding this particular strategy that it is only good for agricultural economy or it is only good for rural economy and so on. But, that is not true this particular methodology can be in a used for design of products or services that will support livelihoods or businesses at multiple kinds of levels, multiple technological level, socio-cultural organizational, and infrastructure levels.

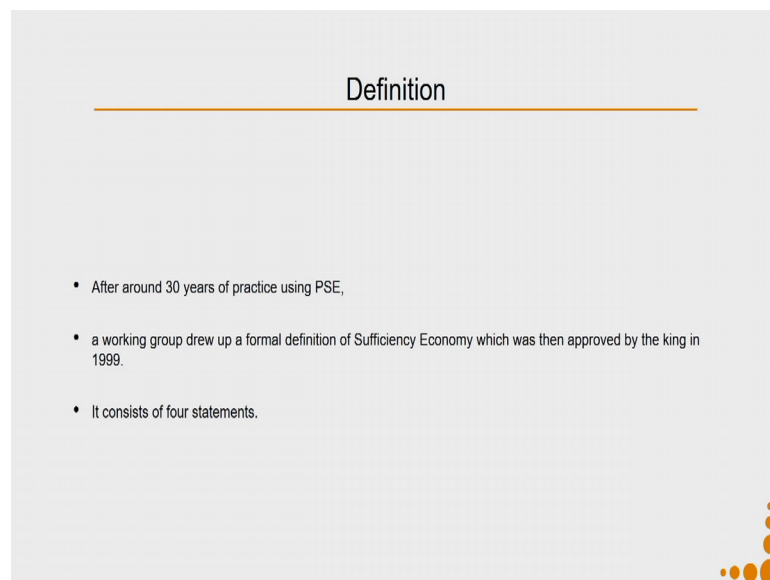
(Refer Slide Time: 03:13)



It is a holistic concept of moderation in consumption and production. So, as we have been discussing about sustainability, we understood that to achieve sustainability, we have to tackle the problem from the consumption side. So, the sufficiency economy philosophy its core is how do we achieve moderation in consumption and production. It is also an ethical base paradigm for sustainability.

So, you will see values play a very important role in this using appropriate knowledge to distinguish between good practices and bad practices pay plays an important role in this, hence it is also an ethical paradigm for sustainability. It was formulated by the king of Thailand-His Majesty King Bhumibol Adulyadej.

(Refer Slide Time: 04:08)



So, let us start with the definition of sufficiency economy. So, around this particular the work on this particular philosophy had started way back in the 1960s, where king through his various experiments, through various deliberations, through different community, he started imbibing into the nation the principles of sufficiency economy.

But, a formal definition was actually coined by a working group. And then it was approved by the king in 1999. So, we will discuss about this formal definition. So, this formal definition consists of four statements. So, we will see each of those statements and the implications.

(Refer Slide Time: 05:02)

Statement 1

Sufficiency Economy is an approach to life and conduct
which is applicable at every level
from the individual through the family and community to the management and development of the nation.

The slide features a light gray background with a thin orange horizontal line under the title. In the bottom right corner, there is a decorative graphic consisting of a vertical column of four orange circles of increasing size, with two smaller circles to the left of the bottom two.

So, the first statement says sufficiency economy is an approach to life and conduct. So, a way of living as well as doing your work which is applicable at every level from the individual through the family and community to the management and development of the nation. So, what are the implications of this particular statement?

(Refer Slide Time: 05:25)

Implications of the statement

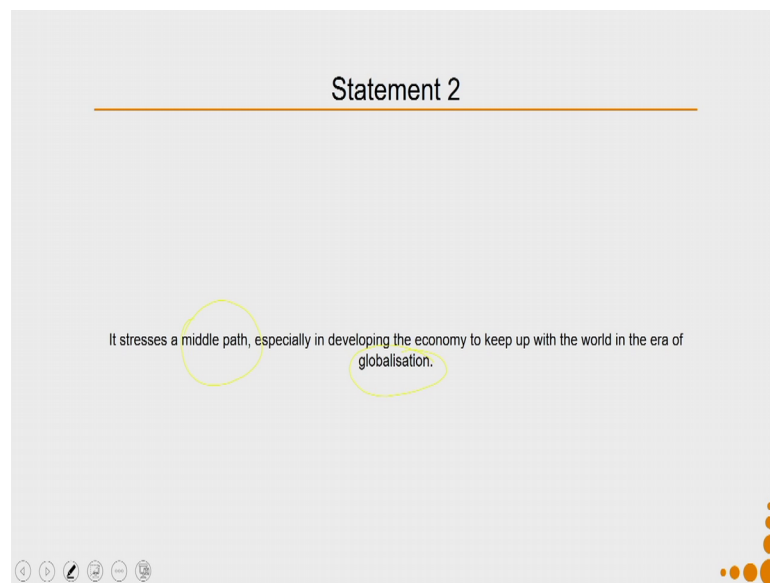
- The Philosophy can be applied at all levels of:
- Economy, and
- Society - individual, family, community, organisational and national level

The slide features a light gray background with a thin orange horizontal line under the title. In the bottom right corner, there is a decorative graphic consisting of a vertical column of four orange circles of increasing size, with two smaller circles to the left of the bottom two.

This sense that the philosophy can be applied at all levels of economy as well as society. So, at societal level I can apply this at the individual level, at the family level, at the community level, organizational and national level. So, we will take one example in

which case, how this principle has been applied to agriculture and something called as new theory agriculture has been formulated in which it tries to start solve the sustainability issues first at the individual level, then the family, then the community, and then goes forward. And provide the strategy to do the same.

(Refer Slide Time: 06:09)



Coming to the second statement of the definition, it stresses a middle path, especially in developing the economy to keep up with the world in the era of globalization. So, what it implies, you can see there are a couple of important concepts over here, stresses the middle path and globalization. So, you can clearly say that it does not say globalization is good or globalization is bad. What it says that you embrace globalization and in response to that we have to acquire the right kind of middle path.

(Refer Slide Time: 06:55)

Implications of the statement

- follow the middle path by avoiding extreme thoughts, behaviour and actions
- also accept the globalisation forces
- use knowledge to make the best advantage of the good forces and avoid the bad forces.

The slide features a light gray background with a thin orange horizontal line under the title. In the bottom right corner, there is a decorative graphic of four orange circles of increasing size. In the bottom left corner, there are small navigation icons.

So, implications of the statement are follow the middle path by avoiding extreme thoughts behavior and actions. Also accept the globalization forces. So, the middle path and globalization forces, they will work hand in hand with each other. How do I decide, when all these globalization forces are changing my material, world changing my cultural, world changing my social world and so on, and as well as the environmental world. So, you use knowledge to make the best advantages of the good forces and avoid the bad forces.

(Refer Slide Time: 07:31)

Statement 3

Sufficiency has three components:

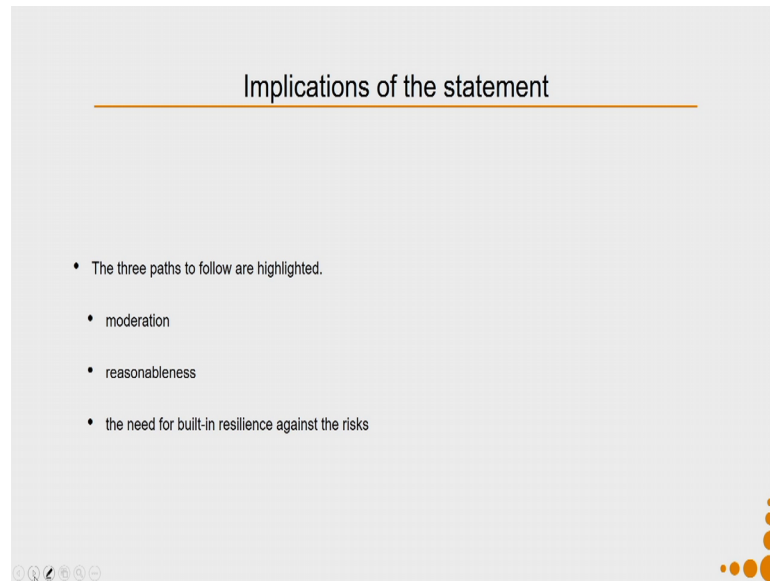
moderation; reasonableness; and the need for built-in resilience against the risks which arise from internal or external change.

In addition, the application of theories in planning and implementation requires great care and good judgement at every step.

The slide features a light gray background with a thin orange horizontal line under the title. In the bottom right corner, there is a decorative graphic of four orange circles of increasing size. In the bottom left corner, there are small navigation icons.

Let us go to the statement 3. So, statement three says sufficiency has three components; first moderation, second reasonableness, and third the need for built-in resilience against the risks, which arise from internal or external changes. In addition, the application of theories in planning and implementation requires great care and good judgment at every step.

(Refer Slide Time: 08:03)



What this particular statement implies is firstly it shows us the three paths to follow. So, the three paths to follow are moderation, reasonableness, and the need for built-in resilience against the risks. So, the sufficiency economy philosophy has been influenced by Buddhism. And it follows the same kind of philosophy in its development. Right, now we are discussing about the philosophy, we will in few slides go into its design implications. Let us go to the last statement.

(Refer Slide Time: 08:42)

Statement 4

At the same time, all members of the nation – especially public officials, academics, and business people need to double up their commitment

to the importance of knowledge, integrity, and honesty, and to conduct their life with perseverance, tolerance, wisdom, insight,

so that the country has the strength and balance to respond to the rapid and widespread changes

in economy, society, environment, and culture in the world.

The last statement says, at the same time, all members of the nation-especially public officials, academics, and business people need to double up their commitment. To the importance of knowledge, integrity, and honesty, and to conduct their life with perseverance, tolerance, wisdom, insight, so that the country has a strength and balance to respond to the rapid and widespread changes, in economy, society, environment, and culture in the world.

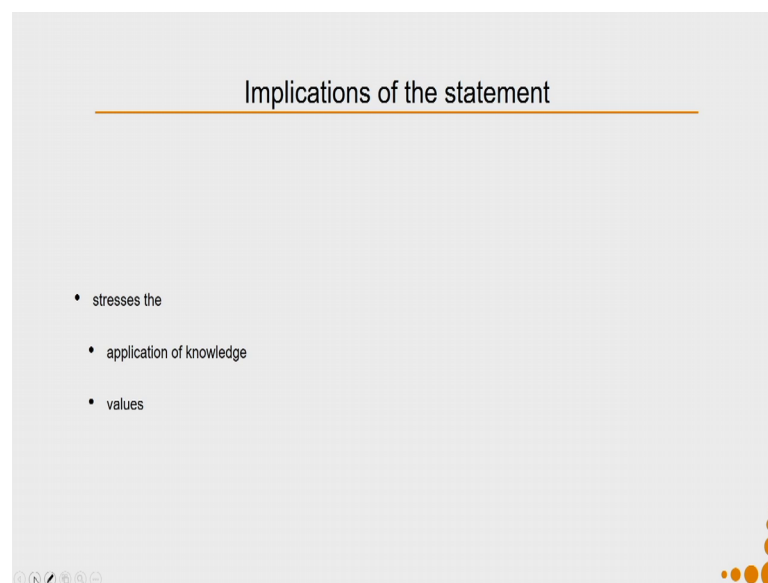
So, here you can see the importance of knowledge. And we have various kind of values integrity, and honesty, perseverance, and tolerance, wisdom, and insight, these are the different values. So, in this particular philosophy what it tries to achieve is try to achieve the middle path, try to achieve reasonableness, self-immunity, and moderation with the application of knowledge and values. You can also see that it is trying to talk about, so that the country has a strength and balance to respond to various rapid and widespread changes in economy, society, environment, and culture in the world.

You can see the hints of systemic thinking, so whatever you do whatever design you do, whatever activity you may take up. You have to place that activity in the context of the national as well as the entire global economy, society, environment, culture and also you have to take into consideration the changes which are coming. So, you can see that as we were discussing in the product service system design, where we are talking about systemic thinking.

This particular approach towards sustainability also is deeply ingrained in seeing the world as a system. As you might remember the definitions of sustainable development, we had spoken about sustainability as is achieved when we look at the world as a system connected in time, as a system connected in space, as a system in which quality of life is also the quality of life as a system has also to be looked upon.

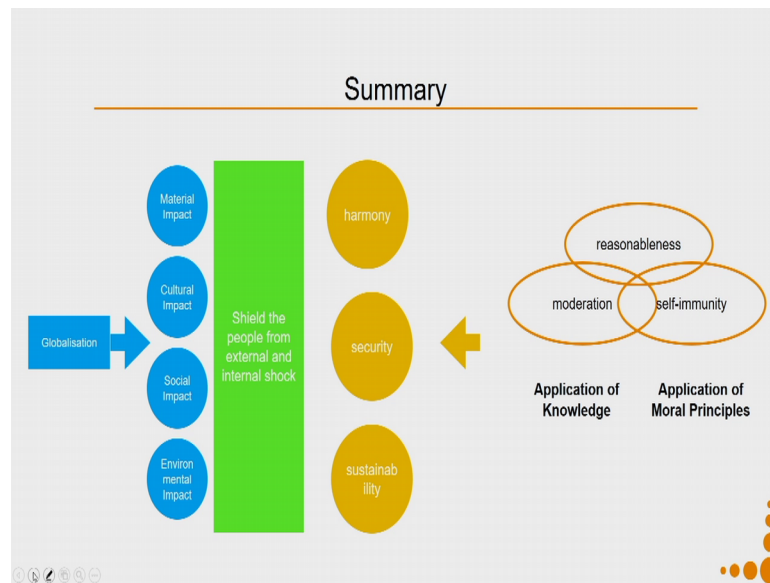
So, you can see the same kind of essence is coming out in this particular approach as well. So, they are talking about not only the national level, but from the individual level. So, you in one of our previous statements, we were talking at the various levels. So, starting from the individual community, and going up to the national level. And in this statement, you can see considering overall the entire global aspect. And we are talking about all the pillars economy, society, environment, and culture in doing the same thing.

(Refer Slide Time: 11:50)



So, what are the implications of this particular statement? The stress over here is that we do an application of knowledge, we also use value a value system.

(Refer Slide Time: 12:03)



And do our design interventions in order to bring a sufficiency economy in place. So, let us summarize what all these statements together imply. So, all of us are aware that there is a huge level of globalization, which is happening. What this globalization leads to is, it brings in different kinds of material impact. So, say for example, today sitting in India, I can order a particular product, which is sold only in USA.

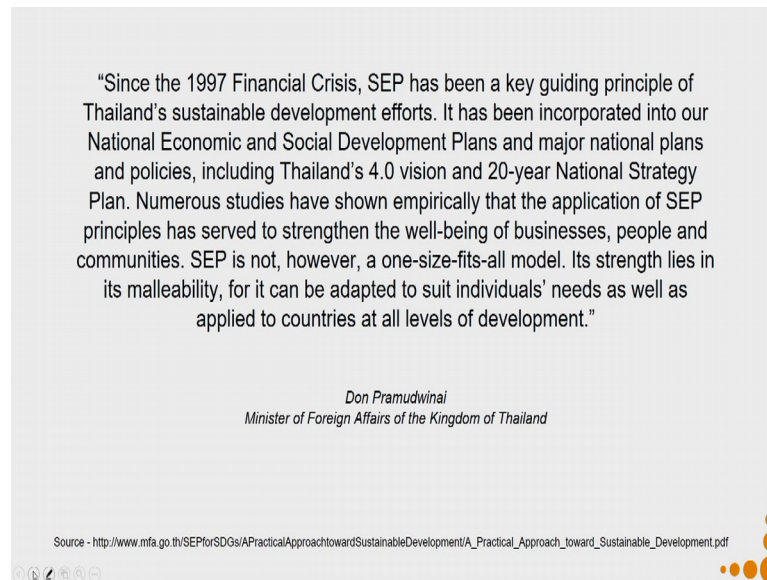
And it is possible to get that particular product in the country delivered, so which means something which is not available I can bring in that. When I see someone else using certain kind of material wealth, I also get influenced by that and I can think of getting that material wealth into my life. So, the globalization has an impact on the material. Culture on that the culture as a whole the society as a whole, so there is social impact, and of course the environmental impact, we have been discussing all these aspects in our lectures.

So, now the aim of this particular philosophy is how do we shield the people from all these external and internal shocks, that is what is about sustainability. So, we can do that for that we have to bring in harmony, between various elements, between various segments of the society and so on. We have to bring in security, and we have to bring in sustainability.

So, the sufficiency economy philosophy says that to achieve this. I will have to work with three different aspects, the interaction between these three aspects that is

reasonableness, moderation, and self-immunity. By application of knowledge, and application of moral principles that is the values, so that is the main philosophical standing of sufficiency economy.

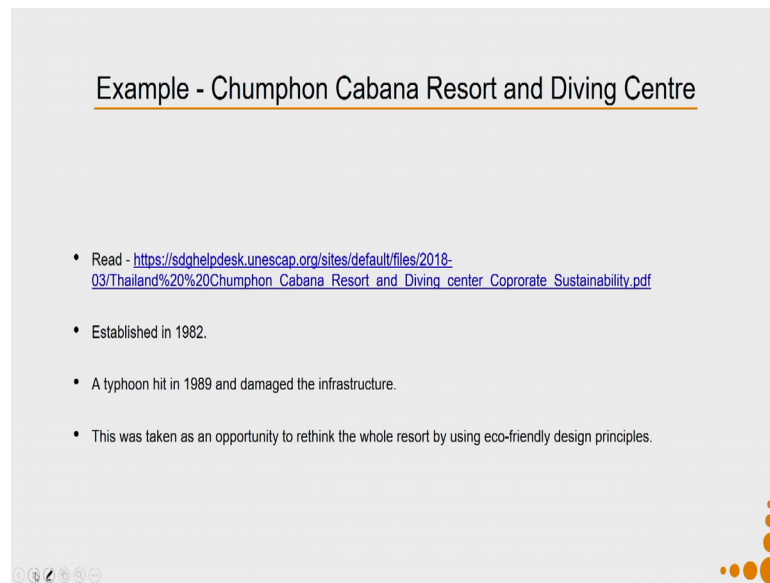
(Refer Slide Time: 14:18)



So, the although this particular philosophy has been in play from the 1960s onwards. Thailand met with a huge financial crisis in 1997. And since then this philosophy has become a key guiding principle of Thailand's sustainable development efforts. It has been incorporated into their national economic and social development plans and major national plans and policies. It is also included in the Thailand's 4.0 vision and 20-year national strategy plan.

The numerous studies, which have shown empirically that the application of SEP principles have served strengthen the well-being of businesses, people and communities. SEP is not, however a one size fits all models. Its strength lies in its malleability, for it can be adapted to suit individuals needs as well as applied to country that all level of development.

(Refer Slide Time: 15:17)



Example - Chumphon Cabana Resort and Diving Centre

- Read - https://sdghelpdesk.unescap.org/sites/default/files/2018-03/Thailand%20%20Chumphon_Cabana_Resort_and_Diving_center_Corporate_Sustainability.pdf
- Established in 1982.
- A typhoon hit in 1989 and damaged the infrastructure.
- This was taken as an opportunity to rethink the whole resort by using eco-friendly design principles.

So, let us discuss some examples. You can find multitudes of examples on the internet; I will only discuss two of these examples. So, the first example comes from the resort it is called as Chumphon Cabana Resort and Diving Center. It was established in 1982. Then a time typhoon had hit this particular place in 1989 and damaged the infrastructure.

So, in 1982 the resort consisted of around seven consisted of seven bungalows and the Taj pavilion in 1989, because of the typhoon a lot of this infrastructure was damaged. So, this was taken as an opportunity to rethink the whole resort by using eco-friendly design principles. Later on in 1997 the country also was hit by an economic crisis. And again this particular philosophy was used to keep the resort financially sound to keep it still maintain its sustainability.

So, let us discuss how this company was able to achieve it by following this principle. So, after the typhoon hit the resort was held by the tourism authority of Thailand. To rebuild a part of certain parts of its infrastructure, and that time they started trying to build eco-friendly design. So, the aim was to conserve energy also integrate the resort with the natural environment, so that sustainability can be achieved. It also tried to achieve sustainability in various other parameters.

Say for example, because it is a resort, and it we will of course food to it is clients, it will require a lot of cleaning products, because it is also a diving center. So, it will be also having certain boats for the diving trips. So, they tried to develop a holistic system in the

resort. So, they went into natural agricultural techniques using which they could grow rice and vegetables, they could raise chickens. And they also produce the biodiesel, which they would need for the diving trip books.

So, you can see slowly you are building up self-sufficiency. They also produce several types of cleaning liquids. Say for example, hotel use shampoo, bathroom cleaners, detergents, and so on. Just because of the implementation of the cleaning liquid production system by using natural resources growing those natural resources. The cost of these supplies decrease significantly from US dollar 1700 to US dollar 300 per month.

So, you can see the amount of savings, which could be achieved. Also the food waste from the kitchen could be used, as chicken feed or the feed for the fish, so your chicken and fish is growing use using waste product and the waste is not wasted. Also the rest of the waste could be used as fertilizer for their, rice and vegetable fields that they had. They also got into environmental conservation.

So, a natural water treatment system was developed using aquatic plants like water hyacinth, and also they made a agreement with the Hualien Beach Community to prohibit any further development on the beachfront. Also motorized water transportation was prevented, which also helps to preserve the local ecosystem. They also decided to so all these developments could not be achieved if they were working separately, so they have to work with the local community fortunately, the local community for them were farmers.

So, as a result they started working with the farmers, so that they could develop how to grow the local food, and because your located in that community you should have a semantic relationship. So, they built a very nice semantic relationship with the local community.

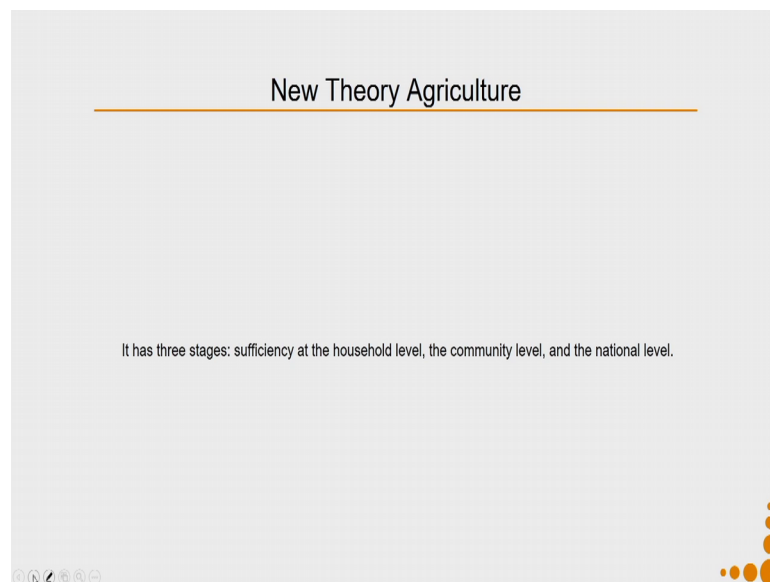
Now, with all these interventions that they could do. Another crisis that they were met because of the 1997 economy crisis was they had some US dollar 1.4 million of depth, because they did a lot of infrastructure, development to improve the whole resort facility. Now, because of the economic crisis, the Thai currency it lost its value by about 30 to 40 percent.

So, now their debt actually increased six folds and from this 1.4 million debt it became US dollar 8.5 million, which is a very big amount. And this swelling up happened within 2-years of time. But, still they could survive, because they design their entire activities of the resort their way of doing business by using the SEP philosophy. This ability to survive also brought in a lot of other business opportunities for them.

Say for example, now they are a well known destination for organizing, seminars and training, where participants learn about issues related to ecotourism, natural agriculture, green management systems, and obviously about the sufficiency economy philosophy. They have been widely featured in many case studies and as which has also give them global face. So, many and many many more people come to know about their initiatives which also attracts them more clients.

So, from this example you can clearly see that this has been a context in which the commercial enterprise use the philosophy of sufficiency economy, and came up with a good business model. Let us go to the next example.

(Refer Slide Time: 22:01)



So, this one is called as new theory agriculture. This particular technique was experimental and perfected by the king himself in his own palace fields, and then it was disseminated to the people of Thailand. So, this particular theory it has three stages. So, sufficiency at the household level, the community level, and the national level.

So, in the first stage, which is the household level. So, first you have to achieve sufficiency at the household level, and only then you can go to the next level. So, to create the sufficiency at the household level what you have to do, so you have to be able to meet the most basic life necessities by this it might mean say effective land management for housing, ample clean water, nutritious food resources accepts to well being through locally grown hubs.

So, in order to achieve all this thing depending on the location, depending on (Refer Time: 23:15) other geographical aspects, and socio spatial aspects. Appropriate and sustainable farming technologies were designed and the farmers were educated, so that they can select the most appropriate and sustainable farming technology suitable for their requirements. They could make use of say interrelationship between insects and weed control, and then naturally grow their crops without addition of pesticides or weedicides and so on. Also like proper crop rotation, holistic, agro system.

Now, the first stage is achieved. Once the first stage is achieved, one has to move to the second stage that is the community level. So, to create sufficiency at the community level various kind of activities which help you to share resources also help you to do business together. Say for example, cooperatives, where (Refer Time: 24:22). So, the cooperatives can together do various activities, various agronomic activities, more efficiently also they have better efficiency in selling their produces.

So, because of this community level cooperative and sharing activities, we could achieve a more self reliant community rather than depending on the middlemen who might exploit them. Other activities like saving groups, community enterprises, health care centers, they were all set up, so that this second stage of sufficiency can be achieved.

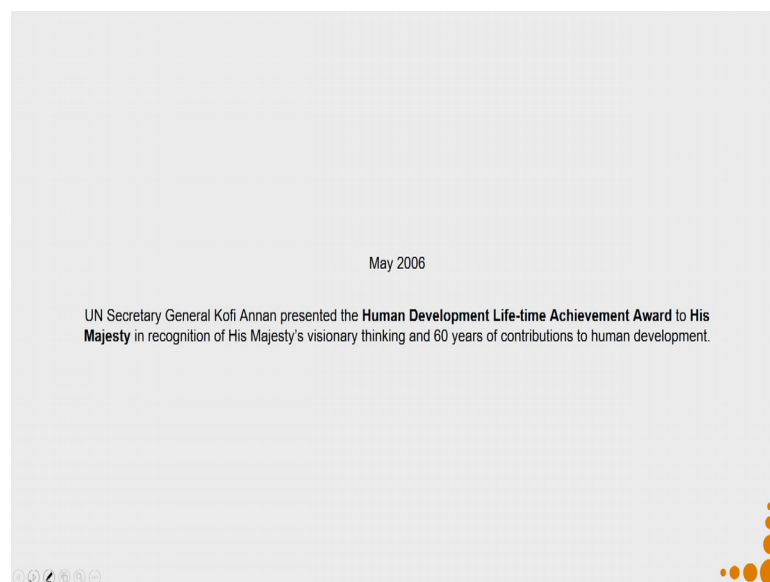
Now, let us go to the third stage that is sufficiency at the national level, so that is the most advanced of all the three stages and is achieved when communities reach out to outside sources and expand their activities across different levels of organizations. Say for example, if you remember the example of the Varnapura, so the communities reached out and they expanded their activities across different levels of organizations, from dairy farms to cooperative banks, to schools, to collages, to research centers and so on.

So, when and then you keep on expanding this way. And at that particular level, you are reaching the sufficiency at the national level. So, at this stage institutions these can be

private forms as well as government forms, they can join hands in collaborative ways, initiate social responsibility to reach out to communities. They can offer them various facilities, create institutional arrangements, create infrastructural facilities, and so on.

So, this was the new theory agriculture, which was built following sufficiency at the three stages. So, you first achieved household level, then community level, and then the national level. So, we saw two examples one is from business context and another one is from agriculture context, but it again builds up from the household level to the national level.

(Refer Slide Time: 26:46)



So, in response to all these activities in May 2006, A UN secretary General Kofi Annan he presented the first Human Development Life-time achievement Award to His Majesty in recognition of his visionary thinking and 60 years of contribution to human development.

(Refer Slide Time: 27:01)

PSS thinking - comparable to Sufficiency Economy Philosophy's holistic concept

Since both approaches are

- concerned with preserving the environment
- favour system oriented development and thinking
- set priorities on stakeholder interactions

Now, let us try to compare the PSS thinking that we had been discussing with the sufficiency economy philosophy. So, sufficiency economy philosophy we can call it as a holistic concept, because it is trying to work at various levels, and trying to integrate all levels of economy and society. So, both the approaches they are concerned with preserving the environment. They favored system oriented development and thinking, we already discussed the system orientedness of sufficiency economy as well as the PSS thinking.

They are also based on setting priorities on stakeholder interactions. So, all that we discussed in sufficiency economy until now, you could easily see it is not possible without stakeholder, good stakeholder in interaction from which starts from the household level and reaches up to the national level. So, both the thinking, it will have this heavy priority on stakeholder interaction. So, sustainability can be achieved by well design stakeholder interactions.

(Refer Slide Time: 28:15)

Design for a Sufficiency Economy (DSE)

- The designer has to measure the existing users' behaviour to check the degree of compliance to SEP.
- When the needs of the users have been identified by the designer, a priority to the needs has to be set according to the principles of SEP.

So, now let us talk about design for a sufficiency economy. So, till now what we were discussing, where was the philosophy. Usually, people find it very difficult to implement it or that is design for sufficiency economy. So, what does the designer have to do in this particular context? So, the designer has to meet two requirements first. The designer has to measure the existing user's behavior to check the degree of compliance to sustainable economy philosophy to how what degree there is a compliance.

Then when the needs of the users have been identified, so as designers we always go to the users try to identify their needs, you have to set priorities to that those needs. So, the priority to the need has to be set according to principles of sufficiency economy that is moderation, self-immunity, reasonableness with application of knowledge and values. So, this is what design for sufficiency economy implies at a broader level. Let us go into more depth of this.

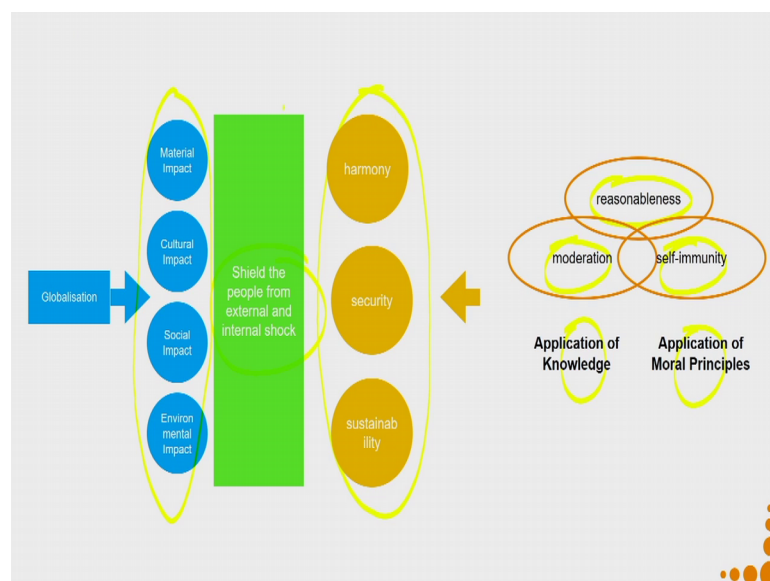
(Refer Slide Time: 29:34)

Misconceptions

- It is meant only for agricultural sector and rural economy only.
- It requires you to produce your own food, clothes, and all other requirements.
- A person following it has to return to the most basic ways of living and behaviour.

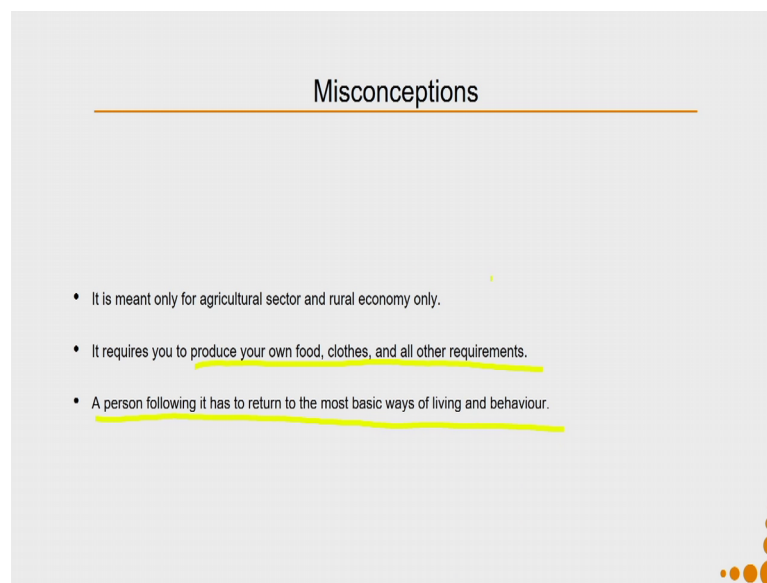
So, before going in we will discuss certain misconceptions. As I told you, one misconception is that it is meant only for agricultural sector or rural economy only, but that is not true. There are ample number of examples in which, it has been applied. So, we saw one from the tourism sector, it has been also applied to some urban economic situations. It requires you to produce your own food, clothes, and all other requirements of course; this is what never is the aim of sufficiency economy.

(Refer Slide Time: 30:03)



So, if you see, if you go back to our slide, where we summarize, what it talks about reasonableness, moderation, self-immunity, application of knowledge, appropriate knowledge to make a distinction between good practices and bad practices, and application of moral principles. To get harmony, security, and sustainability, so that one can shield people from the external and internal shocks; what are these shocks, because of globalization I have material impact, cultural impact, social impact, and environmental impact.

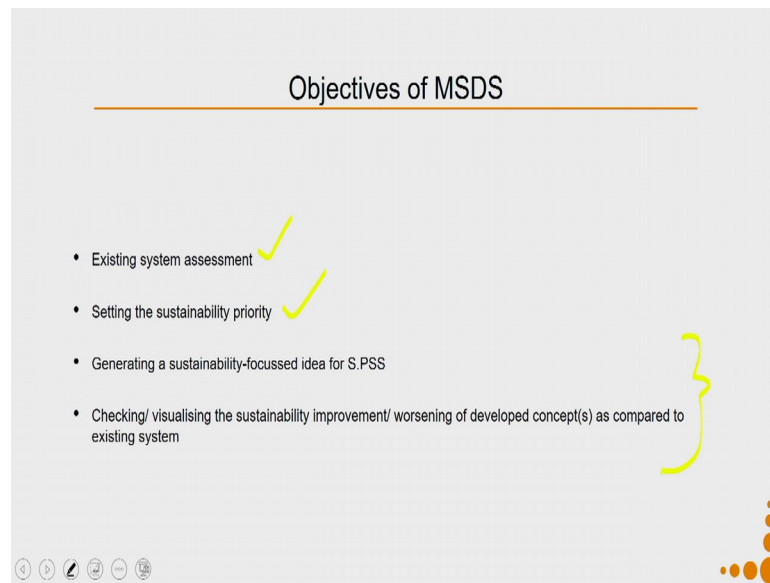
(Refer Slide Time: 30:45)



So, know where we are saying that you have to go back to your basic way of living. or you have to produce your own food, your own clothes on all other requirements, it says embrace globalization. And still you have to bring in the balance; you have to go to the middle path by bringing in harmony security and sustainability by applying appropriate knowledge, moral principles, and get reasonableness, moderation, and self- immunity.

So, it is not at all true that you have to produce your own consumption things or a person will have to return to the most basic ways of living and behavior that is not very true. You can apply it at all societal and economic levels. So, if you have gone through the reading material for MSDS methodology, you would have seen for each and every tool, there was this aspect of how to integrate it with the sustainable sufficiency economy philosophy.

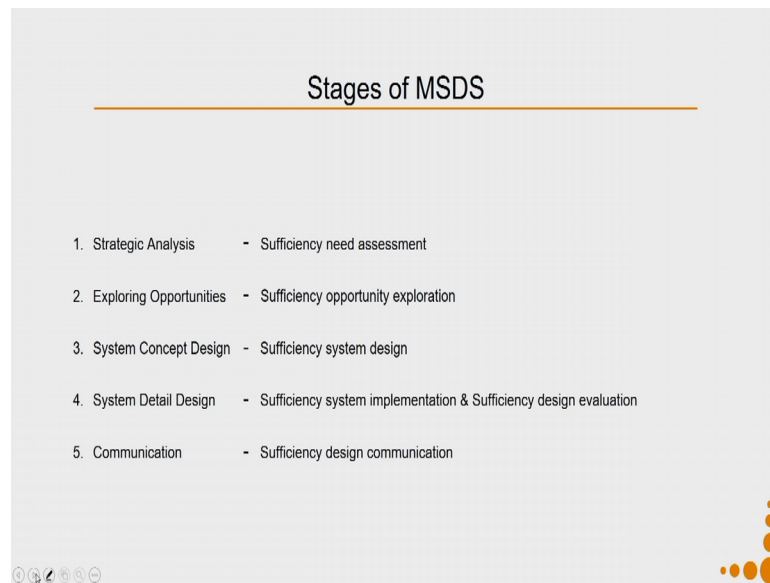
(Refer Slide Time: 31:57)



So, we will discuss that right now. So, what were the objectives of MSDS methodology? The key objectives were existing system assessment. Setting the sustainability priority generating a sustainability-focused idea for SPSS and checking or visualizing the sustainability improvement or worsening of developed concepts as compared to existing system. So, as you saw in a slide on how to design for sustainable economy, we said that first the designer has to figure out whether the consumer, whether the users at this moment, they are following the principles of SEP and to what extent, so that is part of my existing system assessment.

Then the next part was after you have gathered the needs from the users, you have to set priority to those needs on the basis of the SEP principles, so which is the setting the sustainability priority. Then in the next two stages, we use the SEP philosophy to generate sustainability focused ideas and to check or visualize the sustainability improvement or worsening, so how are we going to do that.

(Refer Slide Time: 33:09)



So, the stages of MSDS and we will create the overlap with DAC. So, your stage one was strategic analysis, then exploring opportunities, then system concept design, system detailed design, and communication. So, for strategic analysis, we do sufficiency need assessment.

In the exploding opportunities, we will do sufficiency opportunity exploration. In system concept design, we will do sufficiency system design. In system detail design, we will do efficiency system implementation as well as sufficiency design evaluation. Then in communication, we will do sufficiency design communication.

So, the aim of this particular lecture is not to go in great details about designing with sufficiency economy, because it is a large topic in itself. So, we will make a cursory (Refer Time: 34:19) through the various stages that mentioned that is the need assessment and opportunity exploration and so on, and see how it works. For people who are more interested in this particular topic and want to explore further.

They can go through the reading material on products of the system design and the tools and the techniques for doing the same are explained in detail over there. And for this particular course, this is not a mandatory requirement. This part is only meant for people, who are interested in exploring DAC more in a more in greater depth.

(Refer Slide Time: 35:06)

1. Sufficiency need assessment

Sub-process	Result
Observing users and conducting task analysis	Summary of user behaviour and how the existing system operates
Defining the material products/ immaterial services, actors and flows in the existing system	List of products/services and actors (stakeholders) in the existing system
Mapping the current stakeholder interaction	System maps that illustrate the stakeholder relationships in the current system
Detecting key changes/drivers related to the existing situation	Summary of future trends related to the existing situation
Assessing whether existing conducts are in line with the principles of the SEP	Summary of the Sufficiency Level of the existing situation on a scale of 0-6
Assessing the current Sufficiency level	

So, the first step, which is the sufficiency need assessment. So, what do we do in these particular processes, first we try to observe users and conducting and conducted task analysis like what all they are doing, and we analyze the task. This helps us to have summary of user behavior and how the existing system operates. So, say for example, I take a particular business, I will observe all the users, what are the different tasks that they are conducting, so in the ecotourism context only.

So, they have different buildings in which they have to do cleaning of the buildings, cleaning of their bed sheets, and all other things also they have to have different kinds of cleaning agents, which will be provided to the customers. There will be food, which has to be provided to the customers, because it is also diving center. So, infrastructure for diving, because it is a natural tourism spot, how do I maintain the ecosystems (Refer Time: 36:13) So, I do a thorough, I observe all these different task and do a task analysis. As a result, I will know my users behavior and how they existing system operates.

Then defining the material products or immaterial services, actors and flows in the existing system, so which is something similar as a systems map that is list of products or services and actors or the called the stakeholders in the existing system. So, this is basically our systems map, where I try to put down all the material flows, all the service flows, all the information flows, all the financial flows between the different stakeholders in the existing system.

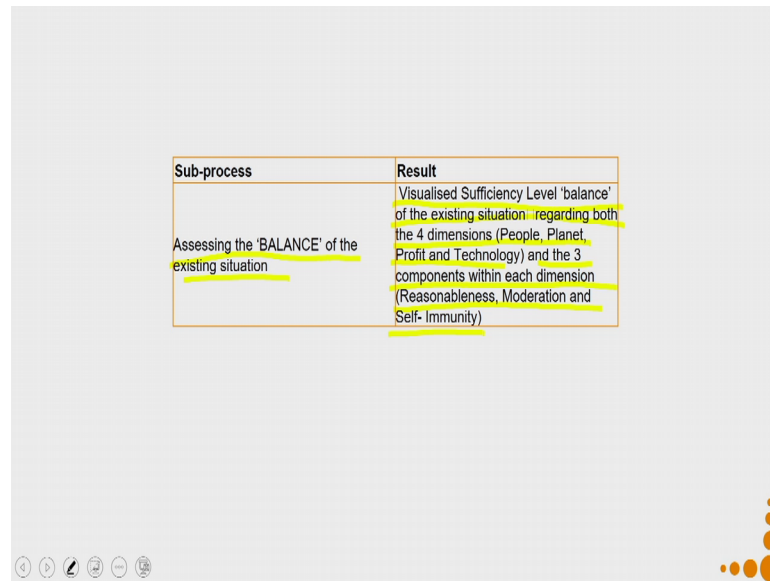
Then I map the current stakeholder interaction, how one stakeholder interacts with another person. So, see how the visitor, how the person who has come on a touristic journey over there, how that person interacts with the whole resort staff or how the this person interacts with the say the farmer in the resort, who is growing the food for this person or say how the farmer who belongs to the local community interacts with the resort and so on.

So, I map all the current stakeholder instructions. So, systems map that illustrate the stakeholder relationships in the current system you have a lot of parallels between our MSDS methodology and the sufficiency need assessment. There are specific worksheets, which have been developed which help you doing all these activities keeping in mind the sufficiency economy philosophy.

Then detecting the key changes or drivers related to the existing situation, so what might change. So, summary of future trends related to existing situation. So, I might expect that say in my country a lot of the drink, which is a very popular drink a main ingredient of the drink is imported.

So, there is a high risk with that particular ingredient, can I start producing that ingredient in house or say for example, I realized that being a resort, my expenditure on cleaning products is extremely high it is one of the biggest component of my expenditure. What can I do, so that I can create self-reliance over there or what can I do, so that I can bring in moderation over there. Say I figured out that a lot of water is wastage wasted over there. I want to bring in moderation over there, reasonableness over there, and I also want to bring self-immunity that I should be able to have that resource called water always flowing in through.

(Refer Slide Time: 39:27)



Sub-process	Result
Assessing the 'BALANCE' of the existing situation	Visualised Sufficiency Level 'balance' of the existing situation regarding both the 4 dimensions (People, Planet, Profit and Technology) and the 3 components within each dimension (Reasonableness, Moderation and Self-Immunity)

Then assessing whether the existing conducts are in line with the principles of SEP and assessing the current sufficiency level. So, here what I do is, I create a summary of the sufficiency level of the existing situation on a scale of 0 to 6. The last sub process in this particular need assessment processes assigning the balance of the existing situation; like we spoke it is all about harmony. So, visualize sufficiency level balance of the existing situation regarding both the 4 dimensions that is people planet profit and technology and the 3 components within each dimension reasonableness, moderation, and self-immunity.

So, now when we are discussing about the design principles, you can clearly see that how you are trying to integrate all the philosophical aspects that we discussed in the beginning of this lecture. So, I am trying to see, what level of balance exists between the 4 dimensions of people, planet, profit and technology, and the 3 components within each of these dimensions, where the balance has gone lopsided, and I can design accordingly.

(Refer Slide Time: 40:32)

2. Sufficiency opportunity exploration

Sub-process	Result
Identification of the strengths and weaknesses that exist now and future opportunities and threats	SWOT analysis
Analysis of company SWOT in relation to Sufficiency Economy principles	SEP-relevant SWOT analysis
Identifying company drivers, design goals and objectives	Document identifying design drivers Document defining goal and objective of design (as a company or a system provider)
Generating knowledge and morality-oriented system ideas	List of knowledge and morality promising ideas
Generating Sufficiency promising system ideas Visualising Sufficiency promising system ideas	Document of ideas and sketches generated

Then comes my sufficiency opportunity exploration. This belongs to the second stage of the MSDS method, where we start exploring opportunities. So, the first sub process over here is identification of these strengths and weaknesses that exist now and future opportunities and strengths threats. So, we will do a SWOT analysis. Then we do analysis of companies SWOT in relation to sufficiency economy principles. So, SEP relevant SWOT analysis is supposed to be done. So, they have worksheets, which help you do this particular activity.

Then identifying company drivers, design goals, and objectives, which becomes your document identifying design drivers, document defining goal and objectives of design as a company or a system provider. So, I will try to understand, what are the goals and objectives of my design in the context, if I want to work something out for this resort considering DAC.

Then I go into generating knowledge and morality oriented system ideas. So, in your MSDS methodology also I was coming trying to generate system ideas, in those particular contexts you had (Refer Time: 41:56), which helps you to generate system ideas on the social dimension, the environmental dimension, and the economy dimension here. You are generating knowledge and morality oriented system ideas.

So, this one is in combination of the MSDS methodology of course. So, list of knowledge and morality promising ideas will come out of this particular aspect, then

generating sufficiency promising system idea visualizing sufficiency promising system ideas. So, you generate those, and you visualize those. So, this is a document, which will consist of your ideas and sketches generated as a result of it.

(Refer Slide Time: 42:28)

3. Sufficiency system design

Sub-process	Result
Creating concepts by selecting the relevant ideas and combining them into themes.	Sketches of ideas for new Sufficiency PSS (SE-PSS)
Selecting the most promising theme and further developing it using tools relevant to system design (e.g. System Map)	System maps, etc.

Then we will go to the third step. So, this is my system designs stage from the MSDS methodology, so I will do sufficiency system design along with following the MSDS methodology. So, my first sub-process in this case is creating concepts by selecting the relevant ideas and combining them into themes. So, I will get sketches of ideas for new sufficiency PSS. So, now we call this as a SE-PSS, so this is a sufficiency PSS. Then, I will be selecting the most promising themes and for the developing, it using tools relevant to system design. So, we will use systems map and all those tools that we have already discussed.

(Refer Slide Time: 43:28)

4.1 Sufficiency system implementation

Sub-process	Result
Constructing a thorough plan of operation	Document and storyboards that detail the new Sufficiency PSS regarding its operation, roles, solutions and what components are needed in each operating step
Defining and designing components	List and design of the components that support the new Sufficiency PSS in five categories: tools, interaction rules, required competences, supplied information and context

Once this is done, then we go into the detailing phase. In the detailing phase, we have two steps from the sufficiency economy principles. So, the first step is when we are doing sufficiency system implementation. In this particular step, what we are trying to do is constructing a thorough plan of operation. So, we are detailing my our system. So, it has to have a thorough plan of operation, how the whole system will work.

So, document and storyboards that detail the new sufficiency PSS regarding its operation, roles, solutions and what components are needed in each operating step. So, it is very similar to the MSDS method, now because you know about the steps of MSDS method, so I am not going back and to all those methods. In case, you are not able to recall them, you can go back to the slides, and see the sink between the MSDS and these sufficiency system aspects.

Then next step in the implementation is designing, defining and designing the components of it. So, you list and design the components that support the new sufficiency PSS in five categories. First is tools, then is interaction rules, then required competences, supplied information, and context.

(Refer Slide Time: 44:58)

4.2 Sufficiency design evaluation

Sub-process	Result
Evaluating the Sufficiency of the new PSS	Visualisation of the degree of 'improvement' of the new Sufficiency PSS in comparison to the existing one on a scale of 0-6
Evaluating the degree of Sufficiency in terms of 'balance' and in comparison to the existing system (in each component as well as overall balance of all 4 dimensions)	Visualisation of the 'balance' of the new Sufficiency PSS's Sufficiency Level in four dimensions (People, Planet, Profit and Technology) and in comparison to existing system

Once this step is done, the next step is doing any evaluation of it on the sufficiency economy principles. So, you evaluating the sufficiency of the new PSS; visualization of the degree of improvement of the new sufficiency PSS in comparison to the existing one on a scale of 0 to 6, you remember in a first step, when we were doing an assessment the sufficiency assessment on the existing system. We had created visualization in which we did a comparison on a scale of 0 to 6. So, now we will again do the evaluation to identify the improvement of worsening broaden.

Then evaluating the degree of sufficiency in terms of balance and in comparison to the existing system in each component as well as overall balance of all 4 dimensions. So, if you remember, did this people, planet, profit, and technology on the three reasonableness, moderation, and self- sufficiency. So, we again evaluate this particular balance, and check out what is the improvement of worsening as compared to my existing situation.

(Refer Slide Time: 46:16)



Thereafter, the task is about communicating this to different stakeholders. So, in that particular context, we can again use written documents or say interactions storyboards like we are already discussed in the MSDS methodology or the story spot that we discussed in the MSDS methodology. So, in this particular lecture, we discussed about a philosophy, which can be combined with our SPSS methodology. And it can help you to design for social equity and cohesion. We do not want to put too much of focus, so if you remember, in when we were discussing our MSDS methodology, when we were into strategic analysis that is the first step of the MSDS methodology.

We took two contexts. One was context, where you can easily identify a company or a stakeholder. There was another second context, where it we called it as a socio economic context. So, when it was very difficult to identify one stakeholder, so that was one particular diversion in the MSDS methodology, which could have been taken in all those contexts, where the social and the ecosystem, where the social ecosystem determines the economy activities of people. And this is another context, in which our whole focus is a social equity and cohesion, and then achieve sustainability from there.

(Refer Slide Time: 48:01)

Reading Material (for more information, optional)

- https://www.slideshare.net/LeNS_slide/k1-sufficiency-economy-moi-kmitl-20-may09
- http://www.mfa.go.th/SEPforSDGs/APracticalApproachtowardSustainableDevelopment/A_Practical_Approach_toward_Sustainable_Development.pdf
- <http://tica.thaigov.net/main/contents/files/business-20160904-174653-791776.pdf>
- Chapter 12, page 382 - Vezzoli, Carlo, et al. Product-service system design for sustainability. Routledge, 2017

So, I have listed down some of the reading materials. So, chapter 12 of the book that we were using for the MSDS methodology details out the sustainable sufficiency economy philosophy. And there are some other reading materials, which you can also go through and learn more about this topic, in case you are more interested about it.

Thank you so much.