
The Consistency of the Sufficiency Economy Philosophy (SEP) with Sustainable Development Goals (SDGs)

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Abstract

The purpose is to find the consistency of the SEP with SDGs. The sample used in this research was from development projects based on the application of the SEP with the total of 1,677 projects. These 1,667 projects were compared to the Taro Yamane table at a 95% confidence level with a deviation of 0.02. In addition, the sample of 10 projects under the framework of South-South cooperation and the Triangular cooperation were purposively selected. Questionnaires were used as the research tools to obtain opinions of experts consistency of the SEP to the dimensions of economic, social, and environmental development with the SDGs. The accuracy of the questionnaires is 0.88. The data were analyzed using Decision Matrix Analysis, Pearson's correlation, percentage, and average. The results showed that sustainable development based on the application of the SEP was consistent with SDGs in 3 dimensions: environmental at 28.40% ($\bar{x} = 4.73$), economic at 27.14% ($\bar{x} = 4.52$), and social at 26.08% ($\bar{x} = 4.35$). The SEP is positively consistent with SDGs at 42.33% ($r = 0.42325$), which suggests that more implementation of development projects in accordance with the SEP leads to more development towards SDGs in each dimension.

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1 Introduction

Since 1950, His Majesty King Bhumibol Adulyadej (King Rama IX) laid out the concept of the sufficiency economy philosophy (SEP) [1] as a philosophy advising the way of existence and practice of every citizen [2] by emphasizing step-by-step development guidelines. The SEP is based on the concept of self-sufficiency to create enough sufficiency and happiness in accordance with the citizen's strength and resources [3]. The goals of the SEP are a balanced and sustainable development [4]; and an ability to accept both internal and external changes in economic, social, environmental, and cultural aspects under the globalization that comes with various changes [5]. The SEP emphasizes on the Buddhist-based middle-path management, moderation, reasoning, and self-immunity under basic conditions: namely knowledge and morality [6]. It is a concept that many scholars are interested in that it extends to the international level, as can be seen from the United Nations in Thailand (UNDP) who developed a report in 2007 on sufficiency economy and human development [7]. The report was published around the world in honor of His Majesty King Rama IX on the auspicious occasion of the 60th anniversary of His Majesty's accession to the throne [8].

The United Nations has convened the United Nations General Assembly of Member States in New York on 25 September 2015 on Sustainable Development Summit in order to frame the world's sustainable development agenda for the next 15 years. The consensus was adopted and announced as "Sustainable Development Goals" (SDGs) consisting of 17 goals and 169 targets by 2030 [9]. These goals are a challenge for every country in the world to create a sustainable balance in economic, social, and environmental aspects; to peacefully coexist among the world community; to obtain a good economy; to have sufficient resources to sustain life; and to be able to accept both internal and external changes. Thailand is one of the few countries that have concrete examples of sustainable development according to the SEP that King Rama IX has clearly given [10]. This can be seen from many royal projects focusing on human development and balanced development throughout all provinces of Thailand; for example, the Royal Development Study Center Projects at Huay Hong Khrai in Chiang Mai, Hauy Sai in Phetchaburi, Phikun Thong in Narathiwat, Phu Phan in Sakon Nakhon, Khao Hin Son in Chachoengsao, and Kung Krabaen Bay in Chanthaburi. These

projects have characteristics and principles linked to the development guidelines of the SDGs, which are to create a sustainable balance in economic, society, and environmental aspects [11]. In addition, Thailand has created partnership for development based on the application of economic philosophy in neighboring countries into action and sustainable development under the framework of South-South cooperation and the Triangular cooperation with 10 countries: Lao People's Democratic Republic (Lao PDR), Tonga, Fiji, Cambodia, Timor-Leste, Sri Lanka, Mozambique, Chile, and Mongolia. The projects under this partnership include the projects to establish learning centers for sustainable agriculture development in accordance with the SEP in Lesotho and Lao PDR, and sustainable community development projects applying the SEP. These projects and partnership are a continuation of the processes and the concept of the SEP for the global community to understand and use as a way to develop their own countries [12].

Nevertheless, many countries still have problems of unresolved SDGs. The problems may have arisen because the direction of development is not balanced among economic, social, and environmental dimensions; the direction of development does not support among all dimensions; and a lack of management systems that are in line with national development guidelines. These problems affect economic, social, and environmental aspects of these countries in various ways [13]; for example, the increase in food and energy prices, the global financial and economic crisis, and the increase in unemployment and poverty [14]. King Rama IX has provided the royal concept of the SEP including the strategy for sustainable development as a guideline for the national development through thousands of projects in all regions of Thailand. These projects have achieved great success in the economic, social, and environmental dimensions [11]. In other words, these projects cover all dimensions of SDGs such as health, poverty, food security, social inequality, education, water, renewable energy, natural resources and environment, peace, stability, equality, and social responsibility [15]. The SEP is also a tool to help guiding the development direction based on balance and sustainability in accordance with the Buddhist-based middle-path principles, and on a precaution to be ready for changes in economic, social, and environmental aspects [16] in order to move towards the SDGs.

From the above importance, the researchers had the idea to approve the consistency of the SEP with SDGs [Figure 1], and to find the links between the SEP and SDGs in economic, social, and environmental aspects in order to use as a guideline for determining the direction of national development in each dimension to balance the development towards SDGs. The research

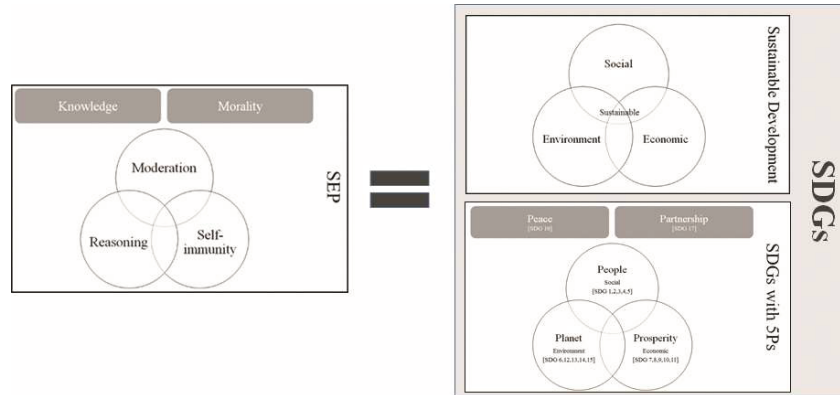


Figure 1 Research motivation to approve the SEP is SDGs.

was conducted according to the methodology which is presented in the next section.

2 Literature Review

2.1 Sufficiency Economy Philosophy (SEP)

“...The socioeconomic conditions in many countries have changed, that is, the dedication to creating more advanced and efficient machinery used in production leads to rapid and vast industrial productivity that may be superfluous. At the same time, it causes people to become unemployed because they are being driven out by machines. It causes economic downturn because unemployed people become poorer and producers lose because their products cannot be sold. Therefore, it is necessary to modify the concept of practice to promote industrial prosperity to balance with other areas in order to survive...”

Royal Speech by His Majesty King Bhumibol Adulyadej
 Given at the Ceremony of Conferring Degrees at
 King Mongkut Institute of Technology
 On Saturday 18 October 1975

The Sufficiency Economy Philosophy (SEP) is a philosophy or practice that King Bhumibol Adulyadej the Great, King Rama IX [17] wished for

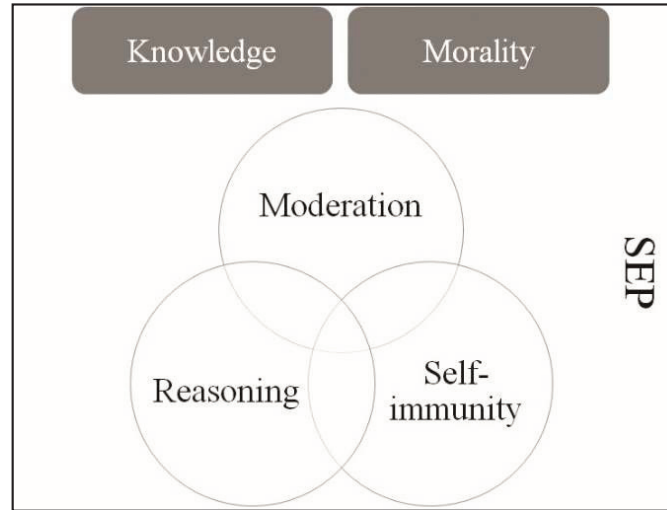


Figure 2 Sufficiency economy philosophy concept diagram.

his people to adhere to as a way of life [18], and for it be used as a basic principle in policy formulation for national development and administration as a middle path linking all dimensions for an integrated development in society, economy, and environment [19]. The usage of the SEP is under 2 conditions – (1) knowledge, which is to have through knowledge in various academic matters and in all areas in order to plan for the action [20]; and (2) morality, which is to have an awareness of morals, honesty, patience, perseverance, wisdom in living, basic morality that does not encroach oneself and others, co-existence with the environment, and sacrifice of personal benefits for common benefits [21] – and 3 related characteristics – (1) modesty, which is an adequacy that is neither too small nor too much, not hurting oneself or others [22], and the knowledge and understanding of oneself enough to think, listen, ask, write, and communicate well [21]; (2) reasonableness, which is to make rational decisions by taking into account the expected outcomes of such actions, and to be able to think critically in order to understand the causes and effects of things leading to sufficiency [23]; and (3) a good immunity in the body, which is to prepare for various effects and changes that will occur by taking into account the possibility of situations that are expected to occur in the future [24] [Figure 2]. If the SEP is applied continuously, it can lead life [16], economy, society, and environment [25] to a balanced development for a stable and sustainable lifestyle [26].

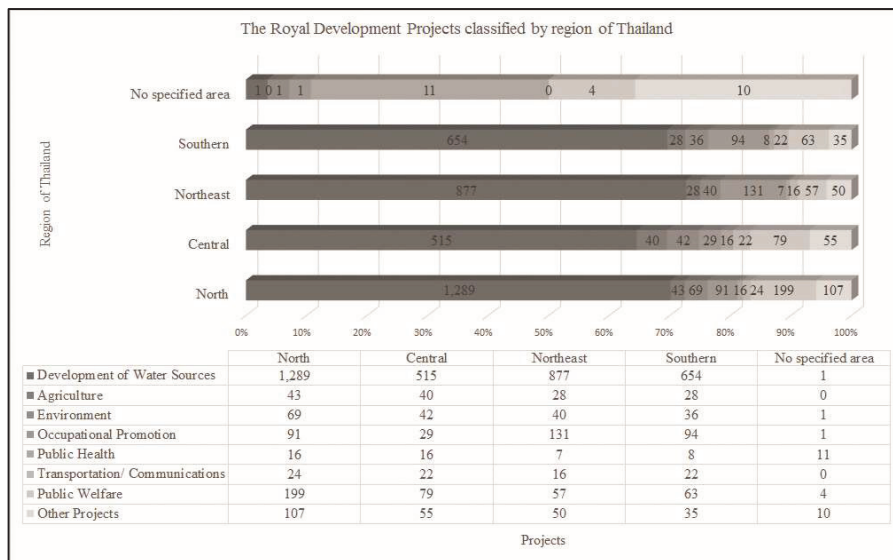


Figure 3 The Royal Development Projects classified by region of Thailand.

2.2 The Royal Development Projects

There are 4,810 Royal Development Projects from the year 1952 to June 2019. These projects are divided into 8 categories [Figure 3]: (1) development of water sources, (2) agriculture, (3) environment, (4) occupational promotion, (5) public health, (6) transportation and communications, (7) public welfare, and (8) other projects [27]. All of the Royal Development Projects have a purpose and aim to help all people to obtain “well-being and happiness” [11].

2.3 Sustainable Development

Sustainable development is a long-term stable development [28] and a development that can meet the needs of the current generation without depriving the ability to meet the needs of generations after [29]. This development concept arose from the ‘crisis’ of climate problems, economic downturns, and rising prices of food, fuel, and commodities – which have been global challenges that affect the quality of life of people worldwide [30]. This concept was first developed in 1987 [31] to properly manage natural resources and to maintain the level of human resource use from exceeding the production potential of nature [32]. The goal of sustainable development is to improve

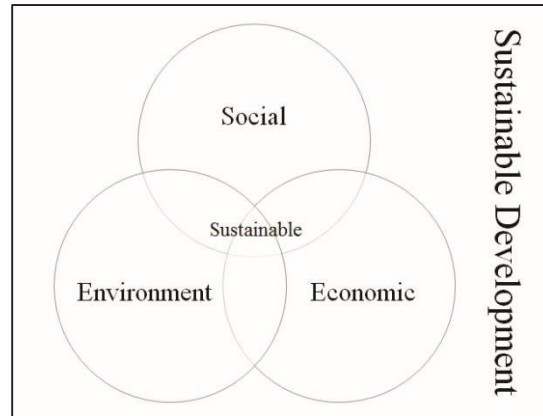


Figure 4 Three pillars of sustainable development.

the quality of life of the world population by focusing on the balance in 3 dimensions – environment, society, and economy [Figure 4] – instead of adhering to the only goal of economic growth like any general development course [33–40].

2.4 Sustainable Development Goals (SDGs)

Sustainable Development Goals (SDGs) [Figure 5] is a guideline for sustainable development by 2030 by creating a balance [36, 41–43] in economic, social, and environmental dimensions [44–46]. The SDGs consist of 17 goals, 169 targets, and 232 indicators [47–49] as follows: SDG 1 no poverty, which is to end all forms of poverty in all areas [50]; SDG 2 zero hunger, which is to end hunger, achieve food security, improve nutrition, and promote sustainable agriculture [51]; SDG 3 good health and well-being, which is to create good health guarantees and promote welfare for people of all ages [52]; SDG 4 quality education, which is to ensure that everyone will have a quality and equal education [53]; SDG 5 gender equality, which is to achieve equality between genders [54]; SDG 6 clean water and sanitation, which is to have a sustainable management of water and sanitation [55]; SDG 7 affordable and clean energy, which is to provide access to modern and sustainable energy sources [56]; SDG 8 decent work and economic growth, which is to promote a continuous and sustainable economic growth [57]; SDG 9 industry, innovation and infrastructure, which is to build basic infrastructure and promote industrial development and innovation that are comprehensive and



Figure 5 Sustainable Development Goals [42].

sustainable [58]; SDG 10 reduce inequalities, which is to obtain impartiality and equality [59]; SDG 11 sustainable cities and communities, which is to have a safe and sustainable residence [60]; SDG 12 responsible consumption and production, which is to have sustainable consumption and production patterns [61]; SDG 13 climate action, which is to act on and combat with climate change and its effects [62]; SDG 14 life below water, which is to preserve and utilize the ocean, sea, and marine resources sustainably [63]; SDG 15 life on land, which is to protect, restore, and support the sustainable use of land ecosystems [64]; SDG 16 peace, justice and strong institutions, which is to promote a peaceful society, achieve fairness, and create strong institutions in all levels [65]; and SDG 17 partnerships for the goals, which is to create a global partnership for sustainable development [66].

2.5 The 5 Dimensions (5Ps) of SDGs

The SDGs are integrated with 5 factors (5 Ps) [Figure 6] consisting of (1) People, which aims to increase the potential of people to be equal; (2) Planet, which aims to protect the world from degeneration; (3) Prosperity, which aims to create economic and social wealth, and to advance technologically in harmony with nature; (4) Peace, which aims to promote peace; and (5) Partnership, which aims to create a partnership for development to be strong and sustainable [49, 67, 68].

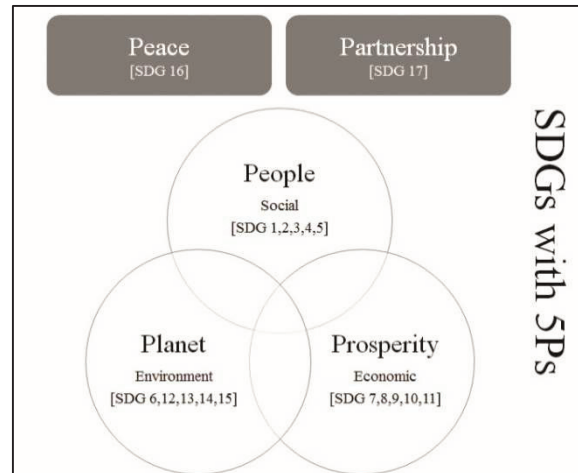


Figure 6 The 5Ps concept in the 2030 Agenda for Sustainable Development.

2.6 SEP for SDGs Partnership

The Royal Development Projects under the SEP have been implemented in accordance with the SDGs (the SEP for SDGs Partnership) in all 17 goals, which can be divided into 8 characteristics [Figure 7] consisting of (1) agricultural sector, which focuses on holistic farm management in relation to SDG 1, 2, 12, 13, and 15; (2) healthy communities, which focus on promoting the well-being of people, environment, society, and culture in relation to SDG 1, 3, 4, and 11; (3) human capacities and capabilities, which focus on promoting good business operations with good governance in relation to SDG 4, 5, 8, 9, and 12; (4) water resources, which focus on the importance of quality improvement and rehabilitation of water and related ecosystems in relation to SDG 6, 7, 11, 12, and 13; (5) climate change, which focuses on promoting green production and preserving ecosystems in relation to SDG 11, 13, 14, and 15; (6) economic stability, which focuses on the management of risk and uncertainty in relation to SDG 8, 9, 10, and 12; (7) strong government institutions, which focus on creating leadership, and inspiring loyalty to the king as the head and heart of state in relation to SDG 3, 16, and 17; and (8) partnerships towards sustainable development, which serve as a guideline for international cooperation in relation to SDG 17 [69–71]. The operations of the Royal Development Projects under the SEP are integrated with 5 factors (5Ps) [Figure 8] in consistent with the development according to the SDGs.

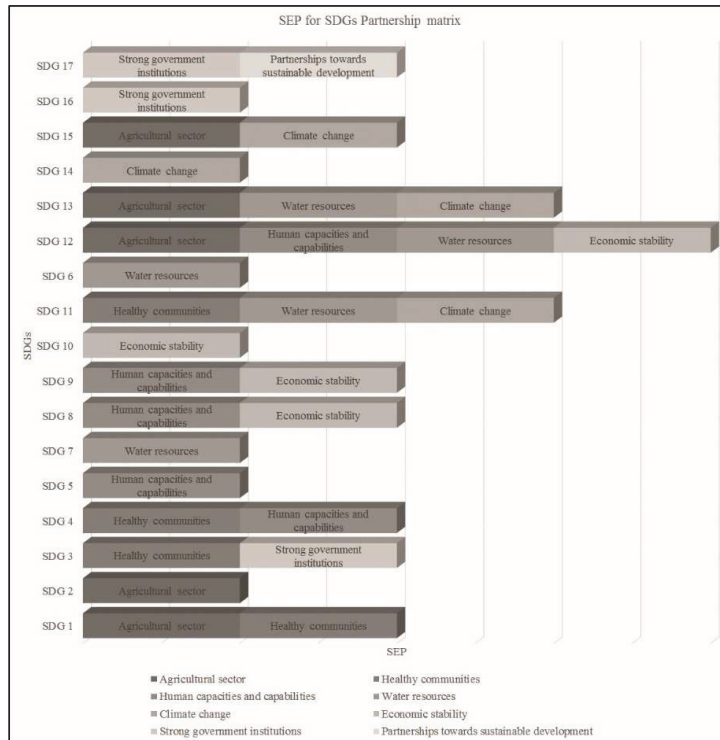


Figure 7 SEP for SDGs Partnership matrix.

3 Methods

3.1 The 6 Steps of the TRENDS Models

The literature research of documents related with the SEP and SDGs was conducted to compile the information into a summary according to the 6 steps of the TRENDS Models: (1) study the possibility from international knowledge, (2) collect data for analysis and research design, (3) trial and inspection, (4) summarize knowledge and disseminate, (5) apply knowledge towards development, and (6) implementation and distribution to the community [72, 73].

3.2 The Samples

The sample used in this research includes (1) 5 experts with knowledge and understanding or at least 5 years of work experience related to the SEP

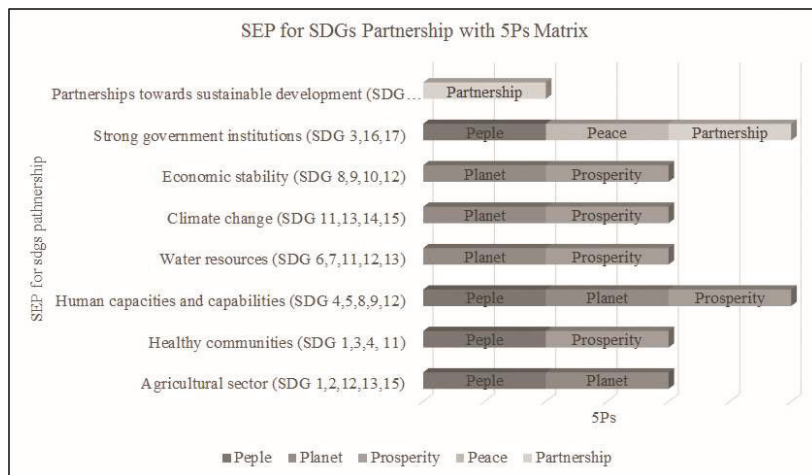


Figure 8 SEP for SDGs Partnership with 5Ps matrix.

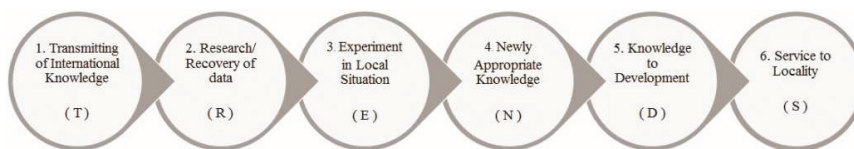


Figure 9 TRENDS model.

and SDGs selected by purposive sampling [Table 1], and (2) development projects based on the application of the SEP from two categories: (2.1) 1,667 royal initiative projects which were compared to the Taro Yamane table at a 95% confidence level with a deviation (e) of 0.02 selected by stratified sampling according to regions and provinces [Table 2], (2.2) 10 partnership projects for development based on the application of the SEP under the framework of South-South cooperation and the Triangular cooperation with 10 countries which are Lao PDR, Tonga, Fiji, Cambodia, Timor-Leste, Sri Lanka, Mozambique, Chile, and Mongolia selected by purposive sampling [Table 3].

3.3 The Research Tools

The research tools were the expert opinion questionnaires about the consistency and the weighted consistency score the royal initiative projects according to the SEP with SDGs at the accuracy value of 0.88.

Table 1 The characteristics of 5 experts

No.	Type of Expert	Professional Role	Total of Expert
1	Experience related to the SEP and SDGs, Teaching and research	Academic/Community Development	3
2	Experience related to the SEP and SDGs, Sufficiency Economy Philosophy learning center	Local scholars/Farmer model development of SEP	2
Total			5

3.4 The Data Collection

The data collection started with the researchers making appointments with 5 experts on the SEP and SDGs. Once the appointments were arranged, the researchers met to collect research data in person. The total of 5 sets of questionnaires, accounted for 100, was collected. The questionnaires data were then used for further analysis.

3.5 The data analysis

The data analysis was done by utilizing Decision Matrix Analysis (1), Pearson’s correlation (2), percentage (3), and average (4).

	Alternative 1	Alternative 2	...	Alternative M
Criterion 1	x_{11}	x_{12}	...	x_{1M}
Criterion 2	x_{21}	x_{22}	...	x_{2M}
...	$X_y = \text{Good}$...
Criterion N	x_{N1}	x_{N2}	...	x_{NM}
Sum				
Rank				
Status		No		No

(1)

$$r_{xy} = \frac{1 \sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2} \sqrt{\sum_{i=1}^n (y_i - \bar{y})^2}} \tag{2}$$

$$pct = \frac{X}{n} \times 100 \tag{3}$$

$$\bar{x} = \frac{1}{n} \left(\sum_{i=1}^n x_i \right) \tag{4}$$

Table 2 The sample of the Royal Development Project split of the region

The Royal Development Projects	Region					Summary	
	North	Central	Northeast	Southern	No specified area	Projects	Sample
1. Development of Water Sources	1,289	515	877	654	1	3,336	1,156
2. Agriculture	43	40	28	28	0	139	48
3. Environment	69	42	40	36	1	188	65
4. Occupational Promotion	91	29	131	94	1	346	120
5. Public Health	16	16	7	8	11	58	20
6. Transportation/Communications	24	22	16	22	0	84	29
7. Public Welfare	199	79	57	63	4	402	139
8. Other Projects	107	55	50	35	10	257	89
Summary	1,838	798	1,206	940	28	4,810	1,667

Table 3 The SEP projects in partner countries

SEP Projects in Partner Countries	Countries	Year
Sustainable Community Development Model	Sri Lanka	2016
	Cambodia	2006
	Timor-Leste	2010
	Chile	2014
	Lao PDR	2016
Sustainable Agricultural Development	Tonga	2016
	Fiji	2016
	Lesotho	2006
	Mozambique	2016
	Mongolia	2016

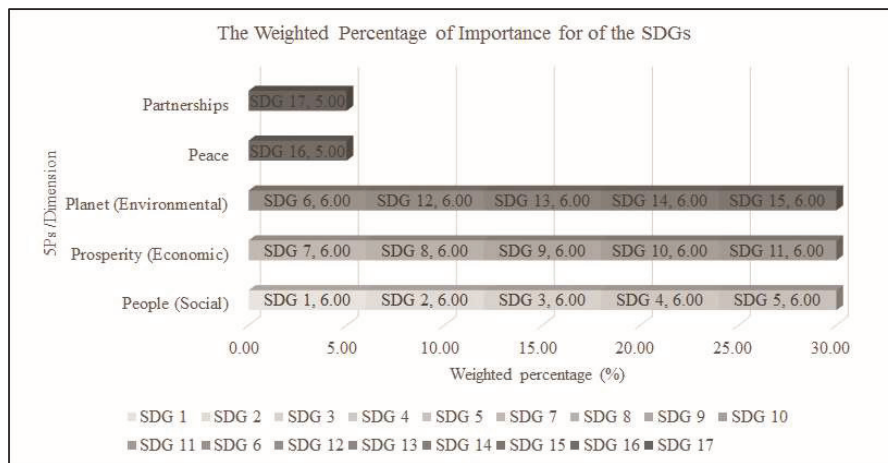


Figure 10 The Weighted Percentage of Importance for of the SDGs.

3.6 The Weighted Percentage of Importance for SEP for SDGs

There are determined the weighted percentage of importance for of the SDG 1 to SDG 15 equally, which resulted in 6.00% for each goal. The weighted percentage of the SDG 16 and SDG 17 equally, which resulted in 5.00% for each goal. The percentage sum of each dimension were 30.00% for people (social) dimension, 30.00% for prosperity (economic) dimension and 30.00% for planet (environmental) dimension [Figure 10].

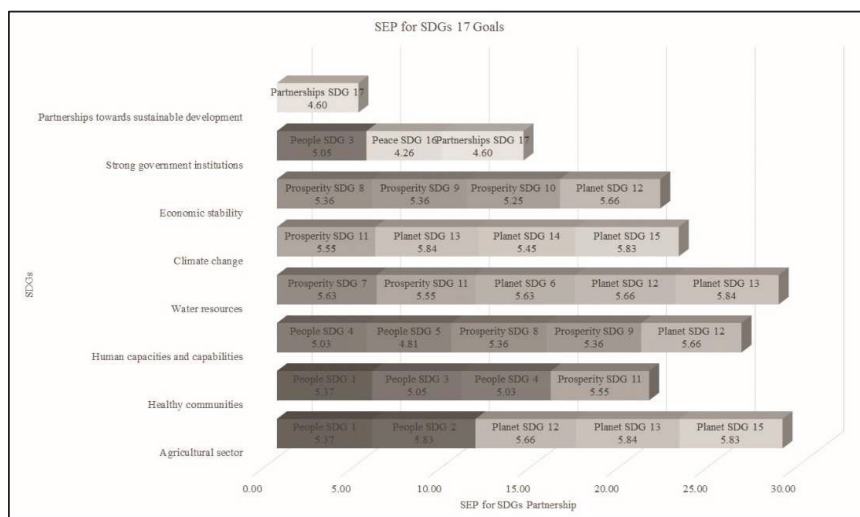


Figure 11 The consistency of the SEP for SDGs 17 Goals.

4 Results

4.1 SEP for SDGs Scores

The development based on the application of the SEP is consistent with SDGs. The data analysis by Decision Matrix Analysis shows that the SEP is consistent with SDGs [Figure 11] in descending order as follows: SDG 13 climate action with the average score of 4.87 accounted for 5.84%; SDG 2 zero hunger with the average score of 4.86 accounted for 5.83%; SDG 15 life on land with the average score of 4.86 accounted for 5.83%; SDG 12 responsible consumption and production with the average score of 4.72 accounted for 5.66%; SDG 7 affordable and clean energy with the average score of 4.69 accounted for 5.63%; SDG 6 clean water and sanitation with the average score of 4.69 accounted for 5.63%; SDG 11 sustainable cities and communities with the average score of 4.62 accounted for 5.55%; SDG 14 life below water with the average score of 4.54 accounted for 5.45%; SDG 1 no poverty with the average score of 4.48 accounted for 5.37%; SDG 8 decent work and economic growth with the average score of 4.46 accounted for 5.36%; SDG 9 industry, innovation, and infrastructure with the average score of 4.46 accounted for 5.36%; SDG 10 reduce inequalities with the average score of 4.38 accounted for 5.25%; SDG 3 good health and well-being with the average score of 4.21 accounted for 5.05%; SDG 4 quality education with

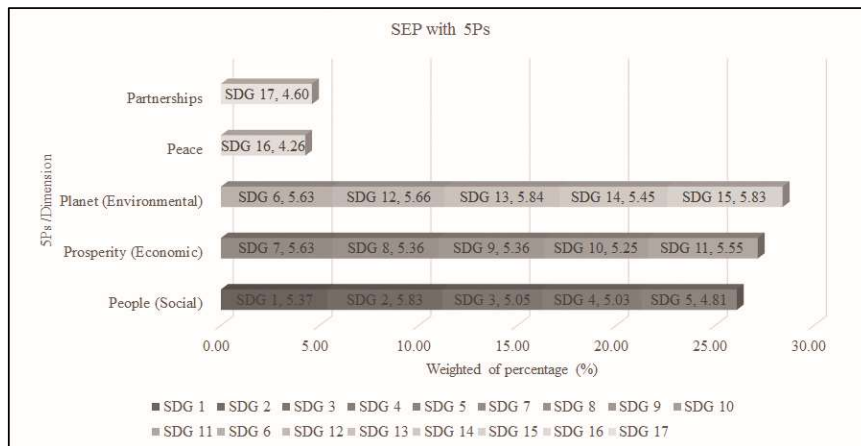


Figure 12 The consistency of the SEP with 5Ps.

the average score of 4.19 accounted for 5.03%; SDG 5 gender equality with the average score of 4.00 accounted for 4.81%; SDG 17 partnerships for the goal with the average score of 4.60 accounted for 4.60%; and SDG 16 peace, justice, and strong institutions with the average score of 4.26 accounted for 4.26% respectively.

4.2 SEP with 5 Dimensions (5Ps)

The SEP is also consistent with each of the 5Ps of the related 17 SDGs [Figures 12 and 13] in descending order as follows: planet (environmental) dimension with the average score of 4.73 accounted for 28.40%, prosperity (economic) dimension with the average score of 4.52 accounted for 27.14%, %, people (social) dimension with the average score of 4.35 accounted for 26.08%, partnership dimension with the average score of 4.60 accounted for 5.41%, and peace dimension with the average score of 4.26 accounted for 5.01% respectively.

4.3 Consistency of SEP with SDGs

The SEP is positively consistent with SDGs at 42.33% ($r = 0.42325$), which suggests that more implementation of development projects in accordance with the SEP leads to more development towards SDGs in each dimension.

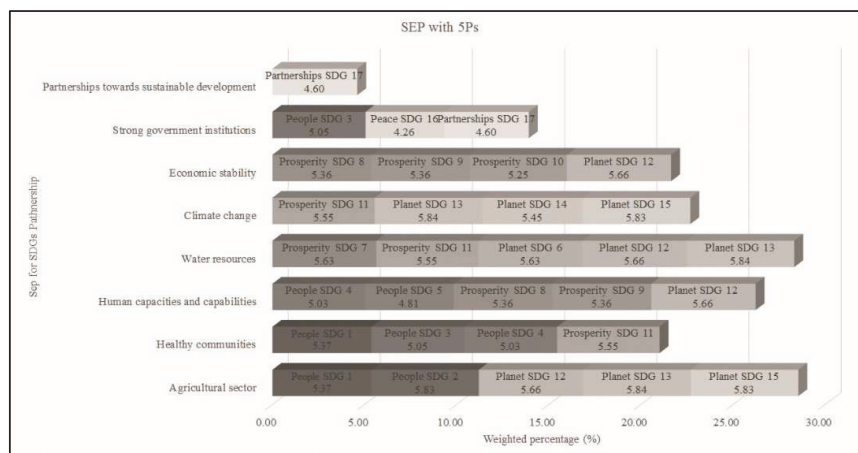


Figure 13 The consistency of the SEP with each of the 5Ps of SDGs.

5 Discussion

The development based on the application of the SEP is consistent and related to 5 Ps of all 17 SDGs [11, 68]. The results can be discussed as follows.

5.1 The Planet (Environmental) Dimension

The planet [Figure 14] shows the highest consistency of the SEP with SDGs at 28.40% (SDG 13 = 5.84%, SDG 15 = 5.83%, SDG 6 = 5.63%, SDG 12 = 5.66%, and SDG 14 = 5.45%).

The planet (environment) is a dimension that must be emphasized along with the progress of modern technology. If there is no good supervision and control as development progresses, the environmental quality problems and pollution can become more severe. Several countries around the world including Thailand currently experience major environmental problems [74]; for example, air pollution and climate change, deforestation, species extinction, soil degradation. All of these problems caused by the impact of human activities on the environment around them [75].

5.1.1 The royal development projects with environmental dimension

The royal initiative projects have given priority to developing and solving problems in environmental dimension. Most of these projects focus on how to preserve and improve the condition of natural resources and environment

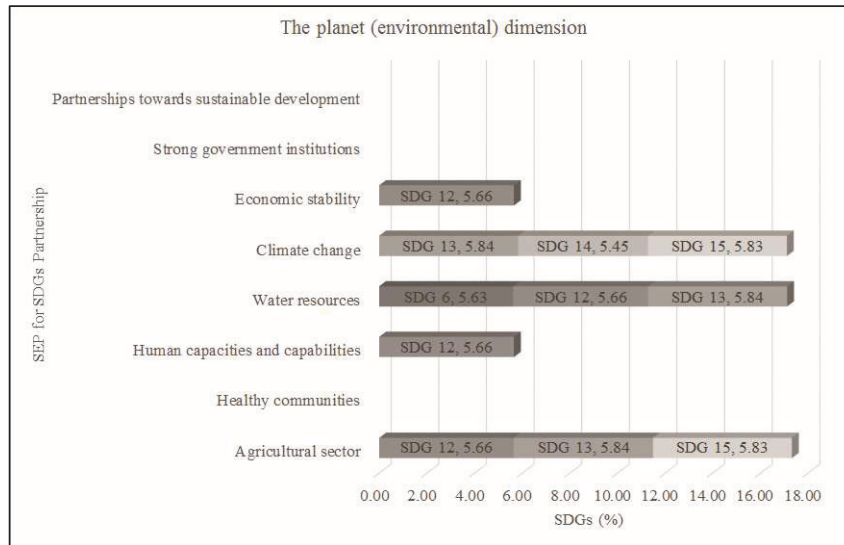


Figure 14 The planet (environmental) dimension.

by conserving and improving soil, water, and forests for into a better quality and enough quantity [76]; for example, Khoao Hin Sorn Royal Development Study Center, Huai Hongkhrai Royal Development Study Center, Khao Changum Royal Study Center for Land Degradation Development, the Royal Initiative Project for the Conservation and Rehabilitation of Ecosystems in the Coastal Area and the Gulf of Thailand, and the Leam Phak Bia Environmental Study Research and Development Project under Royal Initiatives. Khao Hin Sorn Royal Development Study Center has conducted research on the construction of soil and water conservation systems as an example to prevent soil erosion, plant propagation for soil conservation, and soil quality improvement. Huai Hongkhrai Royal Development Study Center, Doi Saket Distrit, Chiang Mai Province has studied and researched about suitable forms of river source development for economic benefits as well as various development forms that enable farmers to be self-reliant without having to destroy the condition of natural environment. Khao Changum Royal Study Center for Land Degradation Development, Ratchaburi Province has restored the forest with natural cycles utilizing simple and economical methods in order to promote forest cycle systems. There are restoration 3 methods utilized by this study center: (1) the forest can naturally restore itself without human interference if the location is suitable; (2) there is no need to interfere or

tamper with the forest, but to protect during the self-restoration process; and (3) there is no need to meddle with deciduous dipterocarp forest even if it is in a bad condition, because the tree stump can branch out and grow into a big tree although it may not be beautiful. The Royal Initiative Project for the Conservation and Rehabilitation of Ecosystems in the Coastal Area and the Gulf of Thailand have conserved and rehabilitated the ecosystems by planting mangrove trees according to the tidal movement. These mangrove trees become a protection against wind and coastal erosion, and a habitat for marine animals which helps restore the natural balance to the area. The Leam Phak Bia Environmental Study Research and Development Project under Royal Initiatives, Ban Laem District, Pecthaburi Province has studied and researched about environmental conditions and problems in the area.

5.1.2 Consistency of SEP with SDGs in environmental dimension

All of these royal initiative projects [Figure 15] allow Thailand to cope with climate change (SDG 13), utilize land ecosystems effectively (SDG 15), have water management systems (SDG 6) in order to provide enough water for sustainable consumption and production (SDG 12), and be able to utilize oceans and marine resources efficiently and sustainably (SDG 14).

5.2 The Prosperity (Economic) Dimension

Next, the prosperity (economic) dimension [Figure 16] shows the consistency of the SEP with SDGs at 27.14% (SDG 7 = 5.63%, SDG 11 = 5.55%, SDG 8 = 5.36%, SDG 9 = 5.36%, and SDG 10 = 5.25%).

5.2.1 The royal development projects with economic dimension

For the economic development, once the royal initiative projects are implemented and the objectives of the projects are achieved, career of citizen in the surrounding area are usually also promoted. All the development study centers under the royal initiative projects have the objectives of studying, researching, and experimenting to find various ways and development methods that are suitable for the environment and occupation of the people living in that region. As a result, people usually welcome and adapt the study results and suggestions of these development study centers, which leads to employment within the community, income, and better living [77]. The examples includes projects on training and transferring of agricultural technology by the development centers country-wide under the Foundation of

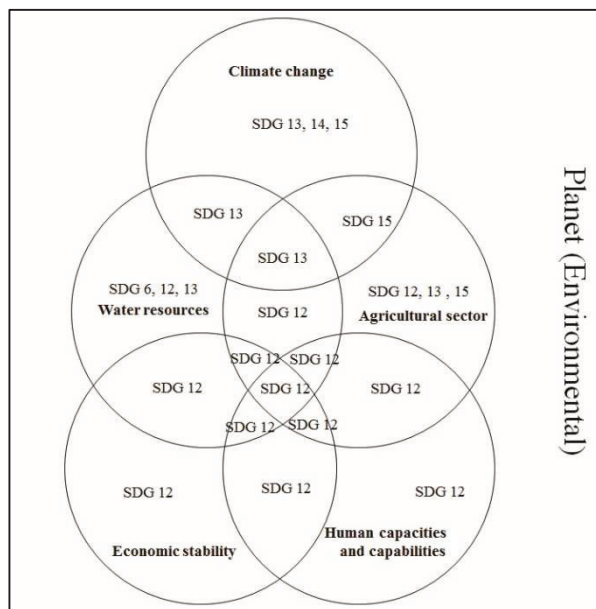


Figure 15 Consistency of SEP with SDGs in environmental dimension. Includes Water resource, Climate change, Agricultural sector, Economic stability and Human capacities and capabilities. Focused on SDG 6, 12, 13, 14 and 15.

the Promotion of Supplementary Occupations and Related Techniques of Her Majesty Queen Sirikit of Thailand (SUPPORT), projects for promotion of small-scale palm oil industry, the Royally-initiated Fruit and Flower Propagation Development Service at Ban Rai, and the Royally-initiated Hual Ong Kot Project. The projects on training and transferring of agricultural technology in villages around the development centers country-wide under SUPPORT have helped farmers with low income because they face obstacles in the cultivation due to the fluctuating weather resulting in insufficient income from the produce to support their families.

5.2.2 Consistency of SEP with SDGs in economic dimension

These development centers [Figure 17] have helped people to have a career without having to depend on the weather by promoting handicrafts from locally available raw materials as an extra career (SDG 8). The projects for promotion of small-scale palm oil industry have resulted in economic growth, industry, innovation, and infrastructure in the community (SDG 9). The Royal-initiated Fruit and Flower Propagation Development Service at Ban

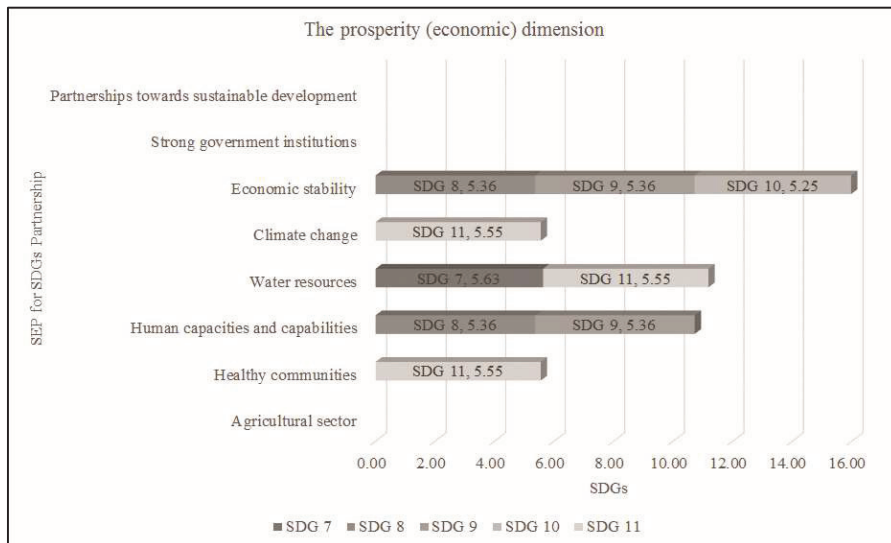


Figure 16 The prosperity (economic) dimension.

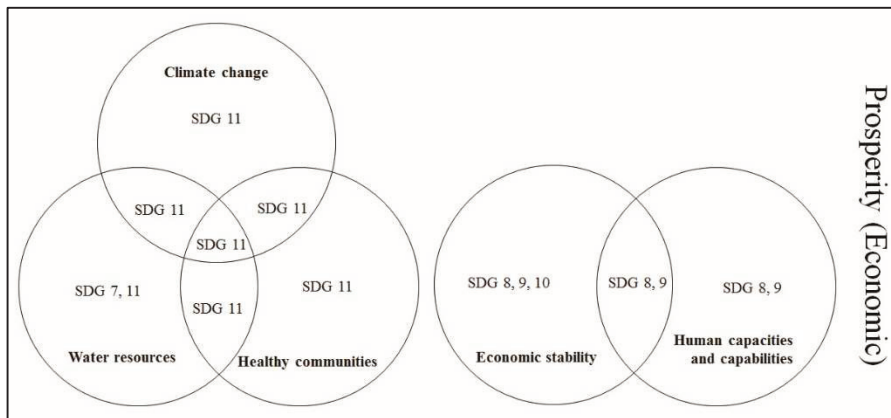


Figure 17 Consistency of SEP with SDGs in economic dimension. Includes Economic stability, Human capacity and capabilities, Water resources, Climate change and Healthy communities. Focused on SDG 7, 8, 9, 10 and 11.

Rai, Chiang Mai Province and the Royally-initiated Hual Ong Kot Project at Kanchanaburi Province have aimed to develop area suitable for citizen to live and work together in accordance with the principles of rehabilitation and balance in the ecosystem that is accessible to everyone (SDG 7). The

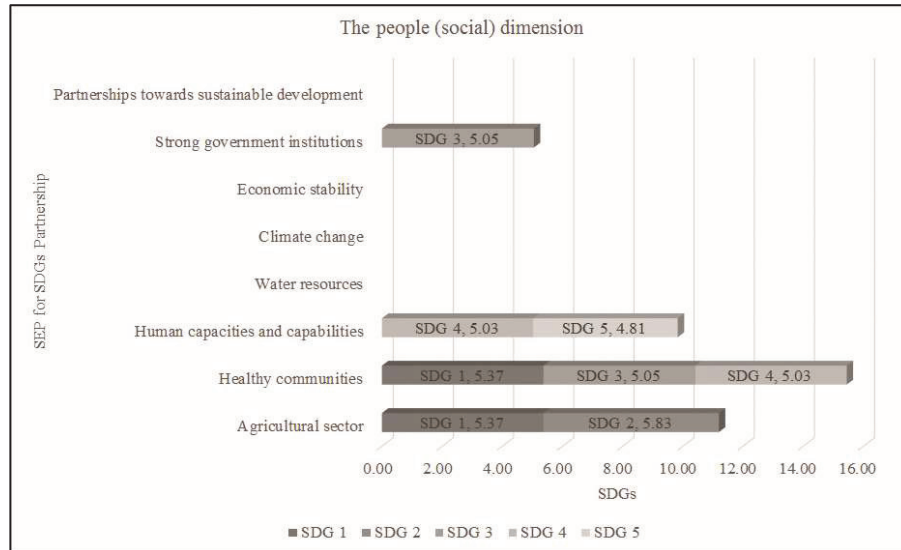


Figure 18 The people (social) dimension.

technology provided by these projects includes integrated planting, vegetable growth house, chemical usage reduction, chicken farming, and handicrafts; all of which aids people to live sustainably by working locally (SDG 11) and reduces urban-country inequality (SDG 10).

5.3 The People (Social) Dimension

Finally, the people (social) dimension [Figure 18] shows the consistency of the SEP with SDGs at 26.08% (SDG 2 = 5.83%, SDG 1 = 5.37%, SDG 3 = 5.05%, SDG 4 = 5.03%, and SDG 5 = 4.81%).

5.3.1 The royal development projects with social dimension

Aside from the development in the environmental and economic dimensions, Thai monarchs and all members of the royal family have various development projects in the social dimension to help the people to have their residences and livelihoods, and to receive the basic facilities necessary for living.

5.3.2 Consistency of SEP with SDGs in social dimension

This has improved well-being of the people in all ages (SDG 5). Such projects can be categorized into three aspects: social welfare and education,

public health, and transportation and communication. The examples of social welfare and education aspect are the project due to the Royal Initiative Doi Yao Doi Pha Mon Doi Pha Chi, the Agriculture Project for Lunch and School Livestock Promotion, the Border Patrol Police School Project, and the Royally-initiated Information Technology Project Ban Salai [78]. The project due to the Royal Initiative Doi Yao Doi Pha Mon Doi Pha Chi, Ban Rom Fah Thai, Tab Tao Sub-district, Thoeng District, Chiang Rai Province has helped people to improve their quality of life and well-being (SDG 1). The Agriculture Project for Lunch and School Livestock Promotion has promoted the cultivation of vegetables, fruits, and crops; food processing and preservation; and animal farming to increase the amount of protein during lunch and to provide sufficient amount of food (SDG 2). The Border Patrol Police School Project has provided education to people in remote areas. The Royally-initiated Information Technology Project Ban Salai, Bo Kleua Thai Sub-district, Bo Kluea District, Nan Province has helped people in remote areas to receive equal education to other areas (SDG 4). The examples of public health aspect are the Princess Maha Chakri Sirindhorn's Mobile Medical Unit which has provided a mobile medical unit to help cure the people; the Nutrition and Children Health Promotion Project for newborns aged 0–5 years old in the remote area, Bo Kluea District, Nan Province; the Iodine Deficiency Disease Control Project, Ban Sawa, Dong Phaya Sub-district, Bo Kluea District, Nan Province; and the Project for the prevention of anemia and lead exposure on children in border area, Umphang District/Tha Song Yang District/Mae Ramat District, Tak Province [79]. The examples of transportation and communication aspect are the project to improve and repair a road in Lam Pa Forest, Umphang Wildlife Sanctuary and the East Thung Yai Naresuan Wildlife Sanctuary, Mae Lamung Sub-district and Mae Chan Sub-district, Umphang District, Tak Province; the project to build a connecting road between Ban Bo Kaew Ban Dong Sam Muen and Ban Wat Chan, Ban Chan Sub-district, Mae Chaem District, Chiang Mai Province; the project to build a road between Ban Huai Manao and Ban Na Kob, Ban Pae Sub-district, Chom Thong District, Chiang Mai Province; the project to build a Sumut Prakan Industrial Ring Road which constructed a bridge over the Chao Phraya River to increase traffic lanes for trucks; and the project to build Kanchanaphisak Ring Road (South Out Ring Road) (Route 9), Samut Prakan Province [80]. All of these development projects in the social dimension allow the people to have access to public health equally, as well as to obtain a better quality of life because of a more convenient transportation system (SDG 3) [Figure 19].

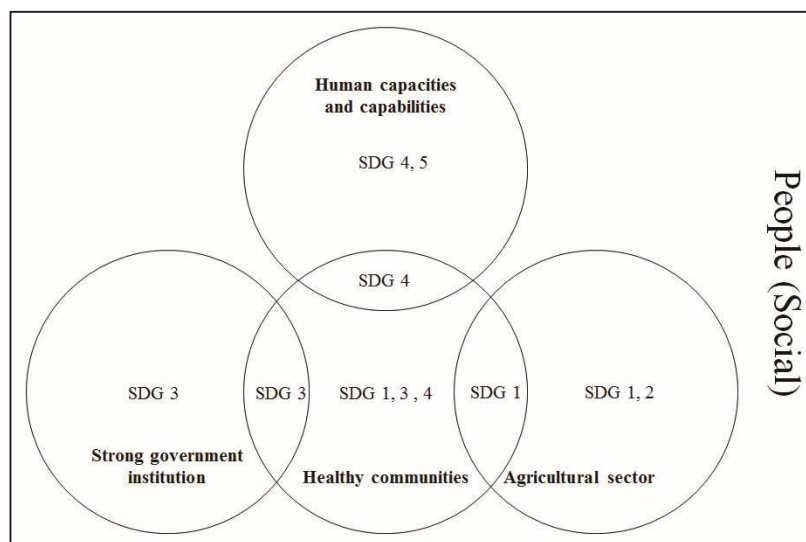


Figure 19 Consistency of SEP with SDGs in social dimension. Includes Healthy communities, Human capacity and capabilities, Agricultural sector, and Strong government institution. Focused on SDG 1, 2, 3, 4 and 5.

5.4 The Model Framework for Implementing the SEP to Achieve SDGs

All Royal Development Projects aforementioned under the SEP have developed in three pillar – environmental, economic, and social dimensions – and have portrayed the genius and wisdom of His Majesty King Bhumibol Adulyadej, Rama IX and the royal family to the Thai people and the world community in every aspects. All royal initiative development projects were done for his people to improve the quality of life, and to have stable and sufficient resources for uses in the future [81]. The success of these projects are also accepted by Lesotho, Lao PDR, Tonga, Fiji, Cambodia, Timor-Leste, Sri Lanka, Mozambique, Chile, and Mongolia; who have partnered with Thailand (SDG 17 = 4.60%, SDG 16 = 4.26%) in order to adopt the development guidelines according to the SEP and the project model due to the royal initiative into the development of their own countries and the conduct guidelines for their people [12]. Thailand has adhered to the SEP and the royal initiative projects as a learning guideline for sustainable development of the country [82]. Thai people have practiced the SEP under the Buddhist-based middle-path principle; that is to maintain moderation, reasonableness,

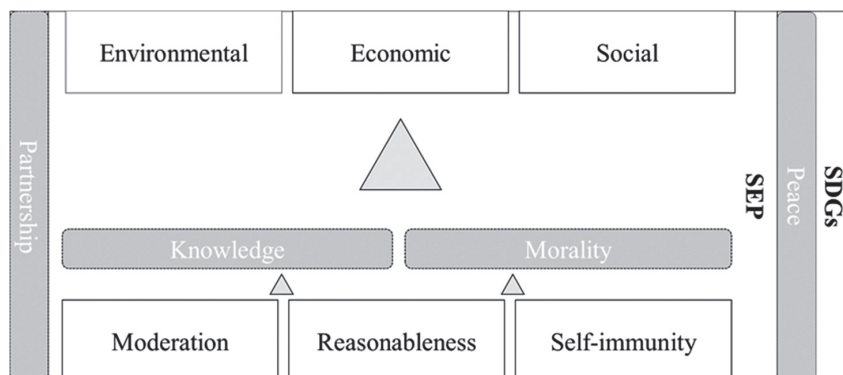


Figure 20 The model framework for implementing the SEP to achieve SDGs. Which was given by King Rama IX as guidelines for development based on balance and sustainability following the Buddhist-based middle-path principle and carelessness in order to be ready for changes in economic, social, and environmental aspects has a tendency to result in the development towards and the achievement of United Nations SDGs in the year 2030 prosperously and sustainably as aimed.

and self-immunity under the basic conditions of knowledge and morality [3]. This way of practice the SEP is positively consistent with all 17 SDGs [9] at 42.33% ($r = 0.42325$). This result indicates that more suitable implementation of the development guidelines under the Royal Development Projects in accordance with the SEP [Figure 20] – which was given by King Rama IX as guidelines for development based on balance and sustainability following the Buddhist-based middle-path principle and carelessness in order to be ready for changes [16] in economic, social, and environmental aspects [25] – has a tendency to result in the development towards and the achievement of United Nations SDGs in the year 2030 [83] prosperously and sustainably as aimed.

6 Conclusions

The SEP with SDGs is consistent and related to 5 Ps of all 17 SDGs. First, the planet (environmental) dimension includes water resources, climate change, agricultural sector, economic stability, and human capacities and capabilities. which focused on SDGs 6, 12, 13, 14 and 15. Second, the prosperity (economic) dimension includes economic stability, human capacity and capabilities, water resources, climate change, and healthy communities. Which focused on SDG 7, 8, 9, 10 and 11. Third, the people (social) dimension includes healthy communities, human capacity and capabilities, agricultural

sector, and strong government institution. Which focused on SDG 1, 2, 3, 4 and 5. The peace (SDG 16) and the partnership (SDG 17) are an extension for those who have partnered with Thailand to adopt the development guidelines according to the SEP and the project model due to the royal initiative into the development of their own countries and the conduct guidelines for their people.

7 Additional Information

The study has been approved by Mahidol University Central Instructional Review Board (MU-CIRB), Certificate of Approval COA No. MU-CIRB 2019/180.3010, date of approval as of 30 October 2019. Informed consent was obtained from all individual participants included in the study. The authors state they do not have any conflict of interest.

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