

ICONSPADU 2021**International Conference on Sustainable Practices, Development and Urbanisation****NEW MEANING AND MEASUREMENTS FOR MALAYSIAN
SOCIO-ECONOMIC OBJECTIVES**Nor Ashikin Mohamed Yusof (a), Intan Sazrina Saimy (b)*, Siti Hasliah Salleh (c),
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Abstract

Sustainable Development, Sustainable Forest Management, Sustainable Economic Development, Socio-Economic Development, Socio-Economic Objectives and Sustainable Development Goals are all interrelated concepts in addressing society's sustainability issues in economy, social, and environment domains. Socio-Economic Objectives (SEOs) cover a wide area, ranging from sustainable economic developments, human development, society and environment. It is aimed at bringing healthier economy and financial stability for more holistic societal benefits in terms of longevity, health, security, stability, happiness whilst protecting the environment and Planet Earth. They are usually measured against Gross Domestic Product (GDP), life expectancy, literacy, employment, environmental index and so on. The same concept is relatively new for Malaysia. It first appeared in Malaysian Research and Development Classification System (MRDCS) document. Despite its importance, the term lacks meaningful definition, understanding and linkages with current policies. It is unclear and quite confusing as to how Malaysia measures them because the indicators for SEOs as found in MRDCS [A1] are describing them in terms of inputs instead of outputs and outcomes. The newly propose definitions are thus more align with those found abroad. They are results of benchmark and mapping against foreign documents and Malaysia's current major policies exercises. They are now output and outcomes based, links and moves in the same direction as national policies to fit Malaysian needs and requirements. The experts' inputs make them more relatable and suitable. This qualitative research uses secondary and primary data.

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1. Introduction

The hundreds of years of human activities have irresponsibly leave negative impacts on the environment, lifestyle and wellbeing of the society to the extent of endangering the survival of the Planet Earth and the future generations. Various terms and concepts like Sustainable Development (SD), Sustainable Forest Management (SFM), Sustainable Economic Development (SED), Socio-Economic Objectives (SEOs), Socio-Economic Development (SoED) and Sustainable Developmental Goals (SDGs) were coined in the global efforts to protect and conserve the environment, for the survival of Planet Earth and mankind in the course of conducting socio-economic activities. They ultimately share the same objectives. While it is interesting to see how the future society would re-interpret, refine, expand or apply them in their context and practices, it is equally important for the current generations to do their parts in protecting the interests of the future generations.

These catchphrases are all interrelated with each other (Allen et al., 2018; Basu & Chau, 2017; Scopelliti et al., 2018; World Bank, 2020). Originally, socio-economic development was two separate and individual concepts covering anything that happens in the social and economic domains of the society. When merged, they are expanded to include environmental and human development. Later the concepts became more focussed on enhancement of society's well-being and quality of life by including matters related to employment, economic opportunities, increment of national income, reducing inequality, peace and security (Kaur & Mishra 2017). In all, any socio-economic activities are permissible as long as they do not jeopardize the environment, Planet Earth or society. Balancing these 3 domains' needs is likely the key to any SoED efforts (Klarin, 2018).

This writing presents discussions on the concept of SEOs as postulated in the MRDCS 6th Ed. Document. It highlights the need to reexamine the meanings of the SEOs, call for the identification of the measuring criteria and proposes potentially new SEOs. Discussion is done in context of MRDCS 6th Edition document.

1.1. Development for Sustainability

The term "development" was previously associated and solely viewed from the economic and financial gain viewpoints (Pradhan et al., 2017) so much so almost justifying the plundering and ever-exploitation of resources and environment (Management Association, 2018). They were to finance the modernization and industrialization (Moyer & Bohl, 2019). Economic growth and physical development were assumed to bring better and quality lifestyle to the society (Mensah, 2019). In truth, they strain and pressure the environment and available resources (Allen et al., 2018; Coccia, 2019). Water pollution, deforestation, inadequate living space, poverty, over-population and illnesses with potentially disastrous proportions are their side effects (Sachs et al., 2018). Realization to protect the environment, Planet Earth and mankind only came slowly and later, when the imbalances between the 3 domains are already in sorry states (Bal-Swain & Yang-Wallentin, 2020; Bali-Swain, 2018).

The Rio Declaration on Human and Environment 1992 largely serves as the basis for current policy and decision making in balancing between SoED and the environment (Davies, 2013). The Declaration recognizes the sovereign right for individual country to exploit its environmental resources in

the course of development. Yet, the country is equally obliged to preserve the environment, giving birth to Sustainable Development (SD) concept. Agenda 21 has bigger agenda than SD when it extended the concept of the former by asking countries to “align, include and integrate the environmental and human needs in their SoED activities”. In short, countries may include socio-cultural matters too. They cover universally common values or issues like suppression, poverty, gender inequality, healthcare, wellbeing, education, green Earth, sustainable economy and development (Yang & Wang, 2021).

Lack of co-operation, implementation and financial capability continue to be the nagging issues (Bal- Swain & Yang-Wallentin, 2020), prompting the global society to review and revisit the problems at the UN Conference on Sustainable Development 2015. Realistically, the materialization of these concepts highly dependent on the degree of country’s SoED, financial resources, availability of technology, political wills, behaviour of the people, countries’ interests and goals (World Bank, 2020). As continuous efforts to balance the 3 domains’ equilibrium, the Resolutions on Transforming Our World: The 2030 Agenda for Sustainable Development were issued, addressing 17 new Millennium Development Goals, famously called SDGs (Pradhan, 2019).

1.2. 1.2 Objectives of Socio-Economic Activities

Literary, SEOs are targeting the improvement in social and economy of the society. They outlined the specific desired outcome of activities based or resulting from interaction between individuals, groups, and institutions. Often the social benefits of SEOs are related to improving human wellbeing and quality of life as found in SoED. They include culture, religion, education, diversity, social equity, liveability, health equity, community development, social capital, moral, worldviews, social support, human rights, employment, peace and safety, social responsibility, justice, community resilience, and human adaptation (Uphoff, 2000). Comparatively, economic benefits usually refer to economic stability, economic growth, economic equity, economic equality. Despite their necessity in fulfilling human needs, they should not be the only over-emphasized consideration or priority in the developmental journey. Other factors must be considered too since they potentially leave major social and environmental consequences (Yang & Wang, 2021). Exploitation of natural resources and the environment is allowable within limits. Restrictions are needed based on realizations that critical natural resources capital are irreversible, can never be complemented or replaced by other forms of resources (Pelenc et al., 2015).

2. Problem Statement

In Malaysia, the SEOs are mentioned in the MRDC document, one of main referral documents for R&D activities. Designed and developed mainly based on the OECD Frascati Manual and Oslo Manual, the MRDCS is accessible to public and useable by anyone interested in R&D. MRDCS document has many functions. Amongst them is to guide researcher for grant applications and measure their performance and contributions towards national SoED. There many editions of MRDCS document. The current and in use is the 6th Edition of MRDCS document. It contains two parts; (i) FOR and (ii) SEOs. The FORs are the “input” for R&D, thus very much disciplines-based and body of knowledge in nature, ranging from natural sciences to applied social sciences and humanities. The FOR component is very

straight forward. It contains codes for field of knowledge, arranged in hierarchical structure, beginning with Division at the top, followed by Category, Group, and Area. Divisions, represent the broadest subject area or discipline. The Areas, being the lowest, represent more detailed dissections of the research disciplines. For instance, FOR Division 8: Humanities has 1 Category, 19 Groups and 360 Areas of research.

The SEOs are described as categorization of R&D activities according to their purposes or presumed sectoral benefits as perceived by the researchers. The SEOs are more objective in nature, as it is more interested in the research benefits and contributions in terms of outputs and outcomes. Before starting his work, a researcher is expected to know the real contributions, benefits and impacts of his research onto the society. Initial evidences from existing literatures can support his claim and the collection of primary data can reaffirm his hypothesis and claims of contributions under appropriate SEO. The government can use that claim and data to assess the performance and success rate of local R&D activities. The SEOs are also arranged in hierarchy, but stop at the Group level. They are not limited to any specific FOR or disciplines like civil engineering, trade, economy, finance or manufacturing only. They are open to open thus wider in nature. For instance, a researcher conducting research on bilingual skills amongst blue collar workers can select SEO no.2; Sustainable Economic Development as research his contribution and outcome. Ability to master multi-lingual are unique and rare skills, giving the staff and organization an extra edge. They are mostly preferred than unilingual employee as it could improve communication gaps thus higher employability rate. Table 1 listed the 6 SEOs of MRDCS 6th, generally covering the 3 main domains and agenda of life.

Table 1. List of the 6 SEOs of MRDCS And Their Category

Division	Category
1. Defence & Security	(i) Defence, (ii) Logistics
2. Sustainable Economic Development	(i) Plant Production And Primary Products, (ii) Animal Production And Primary Products, (iii) Mineral Resources (iv) Energy Resources (v) Energy Supply And Security, (vi) Manufacturing, (vii) Construction, (ix) Transport, (x) ICT, (xi) Commercial Services, (xii) Economic Framework, (xiii) Natural Resources, (xiv) Forest Resources And Products, (xv) Marine Resources And By-Products And (xvi) Bioresources Productions And Products.
3. Society	(i) Health, (ii) Education (iii) Social Development And Community Services (iv) Arts, Culture And Heritage, (v) Religion And Ethics, (vi) Social Problems
4. Environment	(i) Environmental Knowledge, (ii) Environmental Aspects Of Development (iii) Environmental Management & Other Aspects, (iv) Environmental Policy, Legislations & Standards
5. Advancement of Knowledge	(i) Natural Sciences And Engineering, Humanities And Quality Of Life
6. Advanced Experimental and Applied Science	(i) Applied Sciences, Engineering And Technologies

Generally, the SEOs are seen as the real added value and important pillars for the MRDCS document. The requests to identify benefits and contributions of the research actually strengthen the research proposal and make them more meaningful. Researcher cannot make bare claims or only to discover his research's true contributions by chance. He has to be more focused and structured. He has to think harder and state the real contributions of his R&D right from the beginning of his work and not later. He therefore must plan and design his research better to ensure his research reaches and contributes towards the claimed SEOs.

In reality, things are far from clear. A preliminary study conducted amongst academicians, researchers and research management centers as users of MRDCS 6th confirmed the above fact. They do not pay much attention to the SEOs or did as expect above. As matter of complying with the procedures and for the sake of securing a grant successfully, more often than not, they simply ticked or unticked one of the SEOs that they perceived is closely near to their research, regardless whether such claim is true or not. They are neither questioned about their claims nor required to substantiate them with evidences. Majority of them have no clear understanding in determining and connecting their FORs to the correct SEOs.

3. Research Questions

- i. What are the Socio-Economic Objectives of MRDCS, their meanings and functions?
- ii. What are criteria used in measuring the SEOs of MRDCS?

4. Purpose of Study

This writing is (i) examining the meaning and functions of the SEOs (ii) identify the criteria to measure the SEOs in the context of Malaysia, by comparing it with others as found abroad. (iii) propose a new way of interpreting and assessing the SEO. Discussion is done in context of MRDCS 6th Edition document.

5. Methodology

The article uses primary and secondary data. The secondary data provide answers to research question number one and partly research question two. Relevant international documents namely Frascati Manual 2015, UN Sustainable Development Goals 2006 (UNSDGs), Australian Standard Research Classification (ASRC) 1998, Australian New Zealand Research Classification (ANZRC) 2008 & 2020, Korean Research and Development Classification (KRDC) 2014, Japan Standard Industrial Classification (JSIC) 2007 become the benchmark in understanding the of SEOs. Shared Prosperity Vision 2030 (SPV2030), National Science, Technology and Innovation Policy 2030 (NSTIP2030), 12th Malaysia Plan, Key Economy Growth Activities (KEGA), National Key Economic Areas (NKEA), National Priority Areas (NPA), 10-10 MySTIE (Malaysia Science, Technology, Innovation & Engineering), RMK 12 (*Rancangan Malaysia ke -12*) and Industr4W are list of local policy documents understudied in determining suitable SEOs for Malaysia. The primary data are collected through series of Focus Group Discussions (FGDs) and seminars. They permit parties for open discussions (Yackee & Yackee, 2006).

Parties are identified and chosen using purposive sampling technique (Popoola, 2016; Woll, 2013) since the information required in understanding, building and interpreting the meaning of SEOs is technical, niche and unique according to disciplines, body of knowledge and areas of studies (Berndt, 2020; Bouwen & McCown, 2007). They are non-accessible to public and only known to selected few (Firchow & MacGinty, 2020) like policymakers at national level, academicians of higher learning institutions (HLIs), researchers either in HLIs or research institutes or industrial players that rely on R&Ds. In details, 293 experts participated as technical input providers and validators.

6. Findings

There is a logical and practical explanation as to why the SEOs of MRDCS 6th Edition do not refer to the current international or local policy documents or linked to any of their directions. The document was developed in 2011 before majority the above documents came into being. The benchmark exercise produces positive result. At Division level, all the 6 SEOs appear to be in line with the rest of the world. They cover the economic, society and environment domains. Except, they are labelled with different terms and nomenclatures as shown in Table 2. Unlike the SEOs of ASRC 1998 and ANZRC 2000 and 2020, which have 2 levels, the MRDCS 6th Edition has 3 level, supposedly containing the research objectives at Division, Category and Group level.

Table 2. Examples of excerpt of SEOs

SGDs 2030	ANZRC 2020	OECD 2015	KRDC	JSIC	MRDCSV6
No Poverty	Society	Health	-	-	Sustainable Economic Development
Zero Hunger	Society	Health Agriculture	-	-	Society Sustainable Economic Development
Decent Work and Economic Growth	Economic Development	Exploration & exploitation of the Earth Exploration & exploitation Space	-	-	Sustainable Economic Development Environment

The similarity and positive notes stop there as things get more complicated at Category and Group levels. As rules of thumb, the SEOs must cover the social and economic aspects of the society, different from the FORs, specific, objectives and directional in nature. They cannot refer to processes or techniques or mechanisms. Their exact details depend very much on the local needs and requirements. It is very plausible the SEOs for Malaysia might be totally different or identical with the rest of the world.

The current SEOs do not satisfy the above requirements. Firstly, the naming of the SEOs at Division level is too general and over-simplistic so much so it fails to portray the real intention and objectives of the Division. For example, SEO 1 at Division level is labelled as “Defence and Security”, whereas “Defence” and “Logistic” are use in labelling the Category with few Groups of objectives,

including propellant. This is confusing. What is the difference between “Defence” at Division and Category levels? Moreover, there are no clear linkages between items at Group, Category and Division level. How would research in propellant benefits “Defence” and subsequently contribute towards Defence and Security? In what sense would the Defence and Security is relevant for the development of the country? The generality of labelling leaves lots of gaps, subjecting them to various interpretations. It is better if the SEOs state the purpose for needing or providing defence and security, for instance for “National Security and Sovereignty” reasons and use that target as the overall objectives.

The proposed new labelling is more objective in nature, encompassing and it would open the door for R&D wider. This statement is made considering SEO Division 1 is limiting the R&D activities to certain sectors or communities alone. For example, it specifically mentioned military and engineering communities alone and not open to others. The same can be seen in SEOs Division 3 and 4 as well, where emphasis is given to certain sector or industries such as biotechnology, Islamic Finance, Nanotechnology, Built Environment. This goes against the words of the MRDCS 6th Edition document itself and the practices of other countries. For example, research in legal history that retraces the territorial waters or land of the country can still contribute to the “defence and security” of Malaysia. Such inputs are useful in enriching the history and culture of the country as well as in claiming and defending the sovereignty of the country against any territorial claims in the future.

The listing of Division, Category and Group of SEOs are not done in formative structure, thus making it difficult to build the overview of matters, their inter-connectivity and directions. Even when SEO Division 2 is all about Sustainable Economic Development, the long listing therein fails to relate how those matters are relatable to economic growth, economic stability, equality or economic equity. None of this economic jargon appear therein. It becomes questionable too whether “agro industrial technology sustainability”, “commodity industry”, “crop production” or “food industry” listed at Group level of SEOs Division 2: Sustainable Economic Development are either outputs, outcomes or inputs. How would “plant productions and primary products” currently labelled as Category benefit from them, and in turn contribute towards Sustainable Economic Development? The 16 Categories of SEOs Division 2 are at times overlapping, redundant and are better grouped together. For example, Category 1 and 2 which talks about plant and animal productions and primary products respectively are better merged and grouped together with new labelling that signifies “economic growth” instead.

The same happens to SEOs Division 4: Environment too. By merely labelling the objectives as simply “environment”, the same seems lack of directions and suddenly lost its significance. It is unknown whether the term environment is referring to “environmental sustainability” or environment per se. In the absence of one or two important words, it is a puzzle whether they contribute towards the protection, conservation or re-generation of the environment, the 3 main and mandatory things for environmental sustainability.

The same thing is repeated in SEOs Division 3; Human. It falls short in stating the bigger agenda and objectives of encouraging R&D in health, education, social development and community services, arts, culture and heritage, religion and ethics and social problems. The failures have inadvertently reduced the real functions of SEOs themselves, rendering R&D in those listed matters almost aimless or individualistic in nature. It is also hard to differentiate between SEOs Division 5 and 6. Without a better

word or labelling, their stated objectives look almost identical. It is insufficient to merely state the aim is for natural sciences and engineering, without being able to make clear connection between the matters in the Category and Group Levels. Again, both Divisions are being restrictive by mentioning R&D by and in few selected industries and sectors only such as engineering, natural sciences and ICT. Advancement of knowledge is unlimited and could happen in other sectors and industries too.

Because of the various mix-up, it is impossible to correctly identify the criteria and indicators to measure the performance or achievements of the SEOs. They arrangement, targets and structure of SEOs need to be amended first before identifications of those criteria and indicators are possible. Otherwise, they would be equally jumble up and redundant at places.

7. Discussions

There is a clear need to para-phrase the SEOs above for the purpose of integrating new elements, aligning them to the directions of local and international policies and movements and correcting their objectives. This is necessary in enabling things to move towards a common target. This approach is identical to those adopted by other countries (Coccia, 2019; Mensah, 2019). As suggested by Anderson et al. (2012), sustainability requires a shift from a narrow focus on economic and individual interests to a more holistic approach. They must include consideration of the environment, society and future generations continuously, for long term basis and not short or middle term basis, or worst still, on ad-hoc basis. The total shift must involve all level of society (Du & Liu, 2011; Xing et al., 2012). Non-economic considerations could not be ignored or underestimated (Quon & McGrath, 2014). Over-emphasis on economic development alone is entirely backwards and cannot be tolerated. This small fact is important in generating the correct data and real portrayal of R&D activities in Malaysia. They are useful to objectively identify the criteria and indicators to measure the performance, fulfilment and achievement of the SEOs at later stage.

7.1. New proposed SEOs

The followings are the proposed new SEOs. Since they are intended to be used in measuring the benefits and contributions of R&D, the old SEOs have been changed and now converted from inputs based into outputs and outcomes based.

7.1.1. SEO 1: Governance and National Sovereignty

There are two objectives of SEOs 1. The first is to improve the management, administration and governance of the country for the better, so that it is more transparent, cost efficient, productive, competitive, effective, safe and secured. The second objective focusses on nurturing the spirit of love for the country, patriotism and desire to defend the country against any aggressions. Such tasks and responsibilities to secure the security and uphold the national sovereignty involves wider communities are national commitment, not restricted to the government, military or armed forces alone but shouldered by all. The outbreak of COVID19 pandemic on global scale simply exposes the vulnerability of countries globally, and at the same time, highlights the compelling needs for all parties to look and think in a more

holistic manner (Razak, 1998). The above should not be a problem since the concepts are already enshrined in S.12 of Federal List of the Federal Constitution, the supreme law of the land as early as in 1956. It needs to be tackled on holistic basis, tactically known as *Hanruh*. *Hanruh* includes the government, non-governmental agencies, private sector, society and private individual moving as one towards same directions (Ibrahim & Mohd Zainol, 2021). *Hanruh* covers (i) Military Defence, (ii). Civil Defence (iii) Economic Defence, (iv) Social Defence and (v) Psychological Defence.

7.1.2. SEO 2: Economic Empowerment

Instead of viewing economy from development point of view and vice versa, it is highly timely come to re-orientate those views by including the societal, cultural and environmental perspectives too. Economic empowerment, usually found in economic theory, refers to the development and improved ability of the historically, economically, politically or socially disadvantaged group of people at every level of the society to have an opportunity to be engaged in economic activity. It could happen and subsequently benefit the individual, family, community or nation. There are strong relationships between levels of physical, technological and cultural development and the changes they bring into the society's socio-economic development (Miladinov, 2020). The Economic Empowerment can be achieved by making the economic pie bigger through Economic Growth. Growth alone is meaningless when it is not distributed or shared with the society (Haq, 2012). The ability to participate in economic activities would lead to better Economic Equity, if not equality. Creating continuous opportunities to promote and nurture Economic Equity and Equality can on long term, brings a nation nearer towards sustainable Economic Stability, where multiple types of disruptions could be appropriately addressed (Nicola et al., 2020). The SEOs 2 includes and is measurable through Economic Growth, Economic Equity and Economic Stability.

7.1.3. SEO 3: Human and Societal Resiliency

Resiliency refers to the capacity to anticipate, absorb and adapt to disruption. This definition is drawn from diverse theories of resiliency in the areas of ecology, psychology and engineering. The human and societal resiliency concept is closely related to the capacity to withstand pressure and ability to change dire situations into positivity. The concept of human and societal resilience does not only include political, sustainable societal development but is suggesting a more encompassing discourse, expanding it from the more established discourses of societal safety and military security (Chandler, 2019; Haavik, 2020), to include and cover wide ranging concerns from culture, national identity, economy to socio-ecological-political resilience (Høyland, 2018). There is no escape to this as the globalized and liberalized world have turned the nations and international communities to be close knitted, more prone and vulnerable to challenges and competition. Human and Societal Resiliency can be achieved through the fulfilment of individual and societal needs at the different levels. These needs refer to Basic Human and Social Needs, Psychological Needs and Human and Societal Actualisation, as postulated by Maslow's theory of needs. The crucial determinant of social resilience is the endowment of different kinds of assets. For example, economic capital, physical capital, natural capital, human capital and management of capital (European Commission, 2019; Joseph, 2018; Tocci, 2019).

7.1.4. SEO 4: Environment Sustainability

Environment sustainability refers to collective responsibility of a society to use available resources reasonably and sustainably without being over-exploitive and at the expense of the environment for the purpose of conserving and protecting the environment for the future generations. Although the objective of development is to majorly satisfy human needs and aspirations of a material kind, the fact that over exploitation of resources is now compelling societies to compromise those wanting and needs (Awan, 2013). Ever since the Rio Declaration days, all countries are called to adopt the objective of SD as the *jus cogens* aka overriding goal and principles of national policy and international cooperation (Yusof, 2000). The availability and growing technological progress are enabling enough for the whole global community generally and Malaysia, specifically to consider set of strategies and actions that can add to a better adaptation of society to the intended evolution above, promoting more ecologically correct, economically viable, socially fairer and culturally more diversified ways of acting. All these would cumulatively contribute to a more sustainable society (Mensah, 2019). Environmental Sustainability calls for Conservation of current resources and Replacements of the resources already consumed. They are based upon the Sustainable Forest Management (SFM) concept. They can be measured through Sustainable Consumption and Production (SCP), Conservation and Replacement.

7.1.5. SEO 5: Advancement of knowledge

It is impossible for knowledge to remain still. It needs and would advance regardless of time, areas and context. Otherwise, that would be the end sign of a civilization or mankind. Since mankind learnt to read and write, countries with rich archives of knowledge had become the capital of the world. The modern era of globalization and innovation-based economy, simply elevates the status and value of knowledge as the new gold. The knowledge gain could be incremental, as long as there is progressive development from an earlier state, even when their actual, practical use or real-world application are yet to be established. The advancement could be in relation to system, method, symbols, sign, statement, theory or design and could happen in any FOR Division, Category, Group or Area of Research. In order for Knowledge Advancement and Learning to happen, knowledge has to be firstly generated and then expanded. R&D and observation are two amongst the many ways how the above take place (Santos & Serp, 2020). In ensuring knowledge contribution to society is affected, Networks and Ecosystems of Knowledge producers and consumers must be developed. The combination among institutional arrangements and supports by providing appropriate value for the nurturing of social, human and intellectual capital for economic prosperity is the only way forward. Then the process of Knowledge Flows must be allowed to happen to ensure knowledge generated by producers are actually exploited by the consumers so that they can execute and benefits from those activities. Cooperation between universities, leadership and management provides conducive environment for a successful mission for economic and social development of a society (Barkhordari et al., 2019). Specifically, Knowledge about and for the Future is essential to provide a clear direction for knowledge generation and acquisition.

8. Conclusion

The current 6 SEOs are designed with good intentions. However, they are not objective enough, complete or directional in nature. There are missing links in the current format, structure and labelling, making it hard to correctly connect the matters listed under Group and Category and see their contributions towards achieving individual SEOs therein. These outcomes and outputs need to be seen and felt by communities at large before they could appreciate the value of R&D activities.

It is important to ensure the para-phrased SEOs are clear in objective and has specific target to achieve and they are relatable to the socio-development of the country. No matter how slow or rapid the technological development would take place in the future or how they might influence the future needs, the aim for sustainability should remain unchanged. The aspirations to meet human development goals while simultaneously sustaining the ability of natural systems to provide the natural resources and ecosystem services upon which the economy and society depend must not be waived. This is the best practices of foreign countries as shown in the ANZRC documents.

The benchmark and mapping exercise become relevant as they reveal how the policy directions, strategic goals, master developmental plans and their objectives and goals can be linked with the intended SEOs. By so doing, the SEOs could cover the main major areas that are designed and formulated to cater and fit the requirements of Malaysia. Structurally the SEOs would be limited to the fundamental domains for nation building. They include economy, environment, nation, society and knowledge. This is also the spirits of the SDGs 2015.

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