LOCALIZING SUSTAINABLE DEVELOPMENT PROGRAMS:
THE CASE OF CAMANAVA ELEMENTARY SCHOOLS

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ABSTRACT – This study analyzes how sustainable development (SD) is localized through programs in selected public elementary schools in CAMANAVA. The objective is to describe how these ESD programs are mainstreamed in the locale, and to determine their relevance to the setting. Anchored on the principle of localization as mainstreaming and promotion of SD in terms of programs, this case study is focused on four purposively selected schools in each of the four cities. Similarly, using a selection criteria, 13 purposively chosen administrators and 28 teachers were surveyed and interviewed. Results showed that six SD programs were localized, namely: Disaster Risk Reduction and Management campaign, Eco-savers Program, Search for Sustainable and Eco-friendly School, *Gulayan sa Paaralan Program* (School Vegetable Garden), Green School Program and Climate Change adaptation. However, implementation of the programs varies depending on the needs of the schools, available resources, awareness and skills of the respondents and institutional support. Based on the four themes that emerged, they were found to be relevant as vehicles in transforming individuals; developing opportunities, anchoring local initiatives to national goals and harboring benefits. Thirteen (13) identified categories may serve as indicators of programs that are deemed instrumental in the localization of SD in the public schools. The study concludes that there is diversity in program implementation, various levels of commitment in mainstreaming SD through relevant programs. The study provides insights to educators on how programs can serve as tools to foster sustainability in the elementary schools.

Keywords: *Education for Sustainable Development, elementary schools, localization, programs, sustainable development*

INTRODUCTION

Sustainable development (SD) has been an important driving force of human history since the 20st century and specifically a significant and powerful concept in contemporary urban cities in the world (Hassan & Lee,2015). Interest in the concept persists as it continues to be a pressing issue for nations in the 21st century, considering humanity's quest for a better quality of life. The United Nations Department of Economic and Social Affairs (2013) stated that SD is the process by which societies are being reorganized around the central principle of protecting the environment. SD has been fundamental

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paradigm in programs around the globe since its initial endorsement as an overarching objective of the Rio Summit in 1992 where the human being became the center of concern for SD (Laudato Si, 2015).

However, transition to a sustainable society is not an easy way to tread (Dyer, 2007). Harmful global trends continue to increase i.e. deterioration of Earth's biosphere, widespread poverty, harmful effects of climate change and environmental degradation among others over the past two decades are evident despite the various global meetings (UNESCO, 2016). In fact, The United Nations (UN) admittedly failed in integrating the three pillars of SD, i.e. environmental, social-cultural and economic in realizing SD and to integrate SD in all aspects of education which is considered the driving force of SD. Hence, the 2030 Agenda formulated in 2015 remain reiterated the need for reorientation of education as a key enabler of SD.

Several agencies across the globe have made significant contributions connecting sustainability and education. Education goals have great synergies for both environment and development (United Nations Department of Economic and Social Affairs, 2013, p.14). While environmental protection has become a requisite for SD in all aspects as ecological problems continue to harm (Kretz, 2012) and affect lives of people and the Earth, the underlying ideals of ESD makes it a favorable response to the call for an increase in ecological and sustainability literacy, a more holistic and interdisciplinary approach (Dyer, 2007).

Realizing the role of education, educators' attempt to implement a number of sustainable development initiatives over the years from global to the local grass roots level ensued the emergence of the field called Education for Sustainable Development (ESD). ESD was rooted from two educational movements, i.e. Education for All (EFA) and Environmental Education (EE) (Noguchi, Guevara & Yorozu, 2013). These two movements were brought together as one forceful educational movement for SD during the Earth Summit, as contained in Agenda 21. However, there still seems to be a dearth of research literature that will help promote SD (United Nations, 2013). Hence, in more recent years, the United Nations (UN) underscored once more the second thrust of ESD, i.e., the promotion and improvement of quality education as emphasized in SDG 4 of the 2030 Agenda (UNESCO, 2016).

Previous studies agree that ESD is essential for creating needed change (Bentham, 2013; Soderquist & Overakker, 2010). ESD allows the active development of system thinking, behaviors and attitudes among individuals to promote sustainable lifestyle and practices. However, educational policies, environment, and existing ESD initiatives in various sectors are among the varied factors that shape how ESD will be interpreted, developed, and practiced by a country (UNESCO, 2010). Therefore, a nation, an organization and the important social actors conceive, operationalize and implement programs vary in myriad ways.

In the Philippines, ESD is closely connected with the advocacy of the government for SD (Choi & Didham, 2011). The country has clearly and positively shown support to ESD with the institutionalization of its integration through EE and other policies and programs through the Department of Environment and Natural Resources (DENR), Department of Education (DepEd) and other coordinating agencies to mainstream and promote SD through assessment, and trainings in the Philippines (United Nations, 2002).

Similar with other nations, the potency of education and the role of schools in the promotion of SD to protect the future is recognized in the Philippines, as evidenced by numerous policies and programs implemented in schools. However, the country has not fully developed yet due to lack in

coordination, implementation, and monitoring of projects and programs (Rosario-Braid, Tuazon & Lopez, 2011, p. VIII); this warrant understanding of the processes, innovations and *platforms* for effective translation of development agenda at the local level (Global Task force of local and regional governments, 2014).

Localization is a fundamental dimension in Agenda 2030 and an important development strategy towards SD; it is described as the process of pursuing actions at the local level. Effective translation of the development agenda into results at the local level comprises mechanisms, tools, innovations, platforms and processes (United Nations Development Programme & United Nations Human Settlements Programme, 2015). *Localization* is significant in addressing issues in the urban areas, such as urbanization and climate change among others.

Meanwhile, *localization* is described in the country as translation of MDG targets into programs and projects implemented and monitored in the local level (National Report on the Localization of the Post-2015 Development Agenda in the Philippines, 2014). In this study, localization of SD is operationally defined as mainstreaming, promoting, and making SD local in character while pursuing actions at the local level.

The Department of Education (DepEd) ensures the translation of programs to local schools through its issuances and initiated programs that recognize school performance and participation. DepED has urged schools to take the lead role on environmental awareness by pursuing school-based activities (DepED Order no. 52, s. 2011). But with the responsibility to deliver quality education has been decentralized in the country (Republic Act No. 9155), variations in implementations of SD through ESD programs may be expected. For the purpose of this article, programs are referred to both the SD and ESD programs having the same goal- sustainability aptly described as better quality of life for this generation and the future. However, review of literature revealed that there is a dearth of information on how SD programs are articulated in public elementary schools in an urban area at risk of environmental hazards which creates a blank spot which this study aims to fill in.

Hence, this study aimed to illustrate an in-depth analysis of the localization of selected programs in relation to the Environmental Awareness and Education Act of 2008 (RA 9512), the country's articulation of ESD. ESD programs refer to those that are EE relevant being a priority in the country in terms of achieving ESD (Caragay, 2015). Specifically, this study is focused on determining (1) the way ESD programs are mainstreamed in CAMANAVA public elementary schools and (2) the relevance of these programs in the selected localities. Investigation was centered on six (6) selected ESD programs implemented in selected public schools in the cities of Caloocan, Malabon, Navotas and Valenzuela (CAMANAVA) in Metro Manila, which are deemed to promote SD; and on actions taken by select administrative officials and teachers, collectively referred in this study as *educators*, who are the localizers at the subnational to school levels only.

Anchored on the concept of localization as the local implementation and monitoring progress on the new set of goals at subnational level (Lucci, 2015) thereby concretizing the Global agenda in the process (Buentjen, 2016), this study then argues that as a process of defining, implementing and monitoring strategies for achieving global, national and subnational SD goals and targets, national SD policies are translated or mainstreamed in the local level through SD programs as to physical structures and facilities, and practices. Further, relevance of the programs as viewed and experienced by the stakeholders add meaning to the localization of SD programs in public elementary schools.

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Earlier studies have shown that various programs, projects and activities are carried out to actively respond to SD initiatives. Several places have implemented green community activities. To cite, schools in many countries have supported the green school projects and carried such in their own locale with the United States leading the group having the necessary depth and richest practical experience as it covers all levels and stakeholders including the government and other interest groups (Dong-Xue Zhao & Meng, 2015). Meanwhile, green school, also referred to as Eco-Schools in Ireland, creates a healthy environment that is conducive to learning and promotes saving of energy, money and resources. Dong-Xue Zhao & Meng (2015) also explained that the green school is an international environmental education program, a system of managing the environment and award scheme that encourages and recognizes long-term, whole school environmental action.

Meanwhile, in a comparative study of several countries by Mogensen and Mayer (2005), it was reported that the eco-schools are based on Ministry of Education and NGO programs in half of the 26 countries asked. They concluded that mainstreaming of values of EE or ESD necessitate a strong central support from the government and NGO and should not be only a bottom-up process as transformation of schools into eco-schools and gaining significant effect on educational system require a solid legal and institutional basis. However, the study underscored the need of the government to work with the resources and experiences from local cultural and pedagogical contexts.

Although there may be some studies on localization of SD, little is known regarding how SD is localized in public elementary schools in urban areas in the Philippines in terms of programs implemented thru the DepEd. This concludes that further exploration is needed for better realization of the SD goals.

METHODS

Research design

This qualitative study employed a collective case study design (Creswell,2006) in investigating multiple cases of how ESD programs are localized and articulated in the public elementary schools. Using the logic of replication of the procedures for each case, multiple type of case study was used to unravel the issue of localization of ESD programs as it will provide an in-depth analysis of the experiences and practices regarding the issue at hand (Creswell, 2013).

The study site, participants and sampling technique

The study was conducted in the disaster –prone area of CAMANAVA consisting of the highly-urbanized cities of Caloocan, Malabon, Navotas and Valenzuela (CAMANAVA) as illustrated in Figure 1 (Metro Manila, 8 April 2018). The four cities are similar as to the geographical location, historical significance, political and socio-economic characteristics.

Further, the study is focused on four (4) schools purposely selected from each city, i.e., (1) Kaunlaran Elementary School (KES) in Aromar District of Caloocan City; (2) Tinajeros Elementary School (TES) in District IV of Malabon City; (3) Dagat-Dagatan Elementary School (DDES) in Navotas I District; and (4) Pio Valenzuela Elementary School (PVES) in North District of Valenzuela City as shown in Figure 2. The schools were purposely chosen based on these selection criteria: (a) located in a flood-prone area of the city, and (b) active in the implementation of DepEd programs.

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Figure 1. Geographical location of CAMANAVA in Metro Manila (Sources: created from Global City Map; The Urban Roamer, 2018).

Figure 2. Geographical locations of study sites in CAMANAVA (Source: created from Google Maps, 2018).

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Similarly, this study used purposive sampling of participants representing different hierarchy levels, who can best help in the understanding of the central phenomenon (Creswell, 2015). Table 1 presents a summary profile of the study participants in this study included school administrators (n=13, 31.7%) and classroom teachers (n=28, 68.3%) collectively referred to as *educators,* as two major groups of participants in order to have a holistic understanding of the localization of ESD programs in the locale.

Table 1. Summary profile of the study participants from CAMANAVA, n=41.

Participants	Frequency	Percentage
Administrators (A)		
Schools Division Superintendent (SDS)	4	9.8%
District Supervisor (DS)	5	**12.2%**
School Principal (SP)	4	9.8%
x=	13	31.7%
Teachers (T)	28	**68.3%**
X=	**41**	**100.0%**

From a total of 353 teachers in CAMANAVA covering Kindergarten to Grade six levels, 28 were purposively selected in this study with four teachers across the four cities representing each grade level from Kindergarten to Grade six. Creswell (2015) explained that four to five cases as the ideal number for case studies. The school administrators were composed of the four (4) Schools Division Superintendents (9.8%), five (5) District Supervisors (12.2%) and the principals (9.8%) of each of the select schools from each city; while the classroom teachers representing each grade level from Kindergarten to Grade six in all four schools were recommended by the principals based on a given inclusion criteria, giving priority to the experience of integrating ESD in the context of EE and more than 3 years of teaching experience in the grade level. Lastly, the District Supervisor were identified based on the recommendations of the Division Chief, according to their assigned Districts. It should be noted that since SDO Caloocan no longer has a particular District Supervisor for the AROMAR District, two supervisors who know best the target school site were recommended.

Data collection, instruments and data analysis

Primary sources of data include a semi structured interview with the participants using an *aide memoire* or interview guide; school documents; and observation of the school surroundings. Secondary sources of data include reports from the Schools Division Offices (SDO) that validate responses thus capitalizing on data triangulation. Using multiple sources of data aided in validating the findings. Qualitative data were analyzed using cool and warm analysis of significant statements and were coded using themes in line with the study's objectives and theoretical framework. The common themes generated from the participants' responses served as the basis of the reports. A repertory grid as analytical tool was used to exhibit the significant responses.

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RESULTS

1.   Localizing SD programs

Localization of SD is a translation of the national programs in the local context, such as the school. Among the other DepEd programs, the six selected SD programs were mainstreamed in the locale of the study based on the argument that they were implemented, promoted and integrated in the activities of the elementary schools, namely: Disaster Risk Reduction and Management Campaign (DRRMC), Eco-Savers Program (ESP), Search for Sustainable and Eco-friendly School (SSEfS), *Gulayan sa Paaralan Program (GPP) or School Vegetable Garden,* Green School Program (GSP), and Climate Change Adaptation (CCA). Salient features of these ESD programs, as articulated in CAMANAVA, are discussed accordingly.

A qualitative analysis of data showed that localization of SD in terms of implementation, integration and promotion of the programs is evident as to a) physical environment and facilities; and b) practices in school as shown in Table 2.

Table 2. Selected SD programs, physical environment, facilities and practices in CAMANAVA.

SD Programs	a. Facilities and physical environment	b. Practices
	CAMANAVA: safety signage in the campus	**CAMANAVA:** School emergency & earthquake drills; involve parents in planning, organizing and implementation; improvised head cover out of doormat; activities, trainings, monitoring by SDO; integrated in the curriculum;
	MANAVA: Organizational chart for DRRM posted; large metal warning bell	**MANAVA:** assigns focal person and organize SDRMM committee;
Disaster Risk Reduction and Management Campaign (DRRMC)	**Caloocan:** DRRM equipment **Malabon:** DRRM room with equipment, modules, kits, flyers; **Navotas:** DRRM room , safety signage in the campus; **Valenzuela:** DRRM room with equipment, safety signage in every classroom, DRRM area with wall paintings on environmental, flood level water depth marker post strategically located hazards	**Caloocan:** monthly fire, earthquake & locked down drills; Involvement of community and barangay during earthquake drills; Active coordination with the local government units; assigns focal person **Malabon:** Regular monitoring of schools; active coordination with the local government units; uses assessment/ monitoring tool developed by SDO; unification practice **Navotas:** Monitored by Barangay; Updated and functional DRRM program **Valenzuela:** Active involvement of Barangay and Local government, even students with special needs; different programs and activities ; Student – parent directory signed by parents available with advisers

Table 2 (Continued). Selected SD programs, physical environment, facilities and practices in
CAMANAVA.

SD Programs	a. Facilities and physical environment	b. Practices
Eco-Savers Program (ESP)	**Caloocan:** MRF present, uses segregation bin	**CAMANAVA:** integration in the curriculum; Involvement of parents; monitoring by SDO **CAMANA:** involvement of LGUs; **NAVA:** MRF maintained by a teacher in charge **MAVA**- monitoring and recognition given by SDO for best implementer
	Malabon: Improved MRF, creation of floating balsa out of bamboo and recycled bottles, Eco park, shoot that ball trash segregation bin;	**Caloocan:** MRF maintained; daily collection of trash by school maintenance staff during the day, makes decorative flowers from used plastic bottles; gives earnings to students; grade level leader who collects bottles and plastics to be brought to MRF;
	Navotas: MRF present, globe-like trash bin for used bottles, trash bins out of used tetra juice packs, used mineral bottle as plant vases, old tires as fences in garden, used plastic bottles as fences for plants;	**Malabon : MRF maintained by a school staff in charge;** daily collection of trash by school maintenance staff every end of the day, recycle used plastic bottles as plant pots, contests, presence of vibrant-eco-organization in the campus; uses passbook from partner bank, Gr. 6 only and selected pupils only (Eco savers members only); also gives school supplies in exchange of the savings of the pupils ; involvement of YES-O club in management of collection and segregation;
	Valenzuela: Spacious MRF , basketball-like trash bin for used bottles, floating balsa out of old water pipes (not functional anymore)	**Navotas:** recycle used plastic bottles as plant pots and as decorative fences, old tires as fences; collaboration programs, contests, submission of collected trash to Eco-saver Coordinator every Friday, giving of recognition to individuals and classes; collects coconut shells from vendors; uses improvised savings passbook; participated by all grade levels; gives 20% of earnings of sold recyclables to students; pupil volunteers assist in segregation & management of collected trash; proper disposal of harmful materials;

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Table 2 (Continued). Selected SD programs, physical environment, facilities and practices in CAMANAVA.

SD Programs	a. Facilities and physical environment	b. Practices
Search for Sustainable and Eco-friendly School (SSEFS)	**CAMANAVA-** Incorporated in sustainable and eco-friendly school program; hand washing facility; herbal garden; **MANA**: rain water collection facility; **Caloocan:** wall painting about caring for the environment **Malabon:** Aqua tower from Planet water, presence of varieties of vegetables fruit bearing trees, herbal garden, comfort room with lounge for female students, hydroponic, plant boxes with compost, mini eco-park; **Navotas:** several varieties of vegetables and fruit bearing trees, presence of farm animals; **Valenzuela:** several comfort rooms in the campus, Science and Math garden	**CAMANAVA**- integration of environmental themes in the curriculum; promotes health and sanitation; assigns a program leader; **MANAVA:** has a committee for the program; **MANA:** Orientation of pupils, parents, teachers; Incorporates school based programs and activities with Go Green Program, DRRM, ESP, GPP, CCA and other school programs; **MANAVA: Partnership with stakeholders** **Caloocan:** record not available; program discontinued after the demise of the person-in-charge; **Malabon:** Integration of water education in curriculum (use of module); Tree planting of endemic, and indigenous trees ; seedling propagation; partnership with environmental agencies and linkages; raising of awareness of local community and other stakeholders ; Monitoring: periodic review of the program/initiatives; planning involving teachers; seedling propagation; Competence & In-service environmental trainings for faculty; Proper documentation observed in previous years (Records were not updated when program leader was re assigned to another school; **Navotas:** orientation/ information dissemination, National and local participation in tree planting, conducts meeting with parents and stakeholders; Paper conservation activity; planning involving teachers; Use of eco-friendly and non-toxic materials **Valenzuela: I**ncorporated with ESP, DRRM, GPP programs; tree planting with partner school; raising of awareness of local community and other stakeholders; no available document

Table 2 (Continued). Selected SD programs, physical environment, facilities and practices in CAMANAVA.

SD Programs	a. Facilities and physical environment	b. Practices
Gulayan sa Paaralan Program (GPP)	**CAMANAVA-** plant boxes uses for vegetables; presence of moringa trees; **Caloocan:** Large garden discontinued due to construction of new building; **Malabon:** Garden for Gr-4 to 6 with several variety of vegetables, fruits such as grapes; **Navotas**: Garden for SPED, K to Gr. 6 with many variety of vegetables; presence of vegetable gardens for teachers and maintenance staff; **Valenzuela**: Garden for Gr. 5-6 with variety of vegetables	**CAMANAVA**- monitoring by SDO; **NAVA-** Food basket for feeding program; **CAMA**- maintained by teacher in charge; **CANA**- monitoring by SDO; **MAVA**- recognition given by SDO for best implementer; **Caloocan:** sometimes food basket for feeding program; sells extra harvested vegetables for purchase of pencils, seeds, etc.; monitoring by SDO; **Malabon:** Some of the harvests are sold to teachers, staff; **Navotas:** School advisers mobilized to assist in the maintenance of the garden; Strong parental and student involvement in maintaining the garden; **Valenzuela:** harvests sometimes used in the feeding program; maintained by a school personnel/ teacher; Harvests given to those who may be interested
Green School Program (GSP)	**CAMANAVA-** Incorporated in DRRM, GPP, SSEfS, ESP programs; **NAVA:** SMILE image posted in the different rooms; **Caloocan:** SMILE image posted in some of the classrooms; **Malabon :** SMILE image posted in every classroom entrance door; Presence of tarpaulin with seven core components; **Navotas:** wall painting of seven core components and description	**CAMANAVA-** Incorporated in DRRM, GPP, SSEfS, ESP programs; **CAMANA**- assigning of program leader; **Malabon:** documentation of activities; **Navotas:** proper documentation of activities; Wellness program; Nestle Wellness Campus Program; *Pinggang Pinoy* (Wellness plate) ; Nutrileaders;

Table 2 (Continued). Selected SD programs, physical environment, facilities and practices in CAMANAVA.

SD Programs	a. Facilities and physical environment	b. Practices
Climate change adaptation (CCA)	**CAMANAVA:** Incorporated in Green School program; **Caloocan:** Presence of trees; still waiting for installation of rainwater facility; **Malabon:** Presence of varieties of trees mostly old ones; Rainwater harvest facility (for repair); **Navotas:** Presence of several varieties of trees mostly fruit bearing ones; Rainwater harvest facility; **Valenzuela:** Presence of trees	**CAMANAVA-** Integrated in curriculum; Incorporated in Go Green, SSEfS program

a. *Physical environment and facilities*

The physical structures that facilitate localization are illustrated by the presence of gardens, trees, Material Recovery Facility (MRF), handwashing facilities, equipment for the various programs, signage and posters, flood level post, *malunggay* (moringa) trees, trash bins, DRRM area, and rain water collector, among others. Nevertheless, schools differ in the way they are presented, located and used based on available resources, such as the trash bin for the used plastic bottles (see Figures 3-5).

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| **Figure 3.** TES trash bin for used bottles. | **Figure 4.** DDES trash bin for used bottles. | **Figure 5.** PVES trash bin for used bottles. |

Further, signage and posters are indicators of safety, conservation practices and efforts to create a system. Colorful wall paintings for promotion of values that underlie the different programs such as DRRM and Go Green, are conspicuously and strategically located in PVES and DDES.

Flood level water depth marker post enhances safety; likewise, accessible and visible large warning bells in TES and PVES; organization chart for School DRRM and the DRRMC area in the different schools underscore commitment to security, preparedness and adaptive capacities of the school and its stakeholders. However, it is significant to note that the location of the different facilities varies based on the needs, available space, resources, priority and local situation of the school. To cite, higher floors in TES and PVES are used for safety of evacuees and DRRM materials and equipment.

Interestingly, being flood prone areas, TES and PVES once created a floating balsa for the garden out of bamboo and recycled plastic bottles and a floating dinosaur garden from old plastic pipes respectively. These projects in support of the SD programs reflect the innovativeness and creativity of the schools.

The MRF reflects that the implementation of RA 9003 on waste recovery is in place in the four schools while a variety of trees, plants and rain water harvest mirror efforts towards climate change adaptation. In fact, TES still maintains an Aqua tower from Planet water. All four schools maintain their respective school garden in support of GPP but differ in sizes, locations and vegetable varieties grown. Though all four schools are considered large schools, only one school, i.e. DDES have vegetable gardens for each grade level maintained through collaborative efforts of the teacher advisers, students and parent volunteers. All except one school maintain a seed bank.

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Health and wellness of the students are manifested in the handwashing facilities, herbal garden, comfort room with lounge for female students; school based programs such as feeding program, physical exercises and promotion of a culture of service within the warm expression of the students, teachers and school personnel as envisaged by the SMILE project, which is one of the indicators of Green School Program (DepEd-NCR Memo No. 131, s. 2016).

Variations in the presentation of physical structures and facilities signify unique character and priorities of each school in the localization of the ESD programs. Nonetheless, presence of this kind of physical environment is an indicator of creativity, adaptability, awareness, adherence to policies, and guidelines and commitment to their underlying ideals.

b. Practices

Practices that facilitate localization of ESD in schools are best described by school-based programs as to incentives and school initiated activities and integration in the curriculum as mandated by RA 9512 and DepEd orders. Incentives and awards are given to schools to strengthen commitment to the implementation of the program. In fact, PVES emphasizes DRRM even in the implementation of other programs. PVES has been awarded as 2nd place in Best Public School Category in the 2016 Gawad Kalasag Search for Excellence in DRRM and Humanitarian Assistance in the National Capital Region for its outstanding contribution in strengthening the adaptive capacities and resilience of the community in disaster risk.

Meanwhile, practices as presented in Appendix A attest to the awards TES has received for the GPP, ESP and SSEfS in the Divison level; and DDES for the Go Green and SSEfS, as well. Awards and recognition motivate the teachers, students and administrators to work harder in sustaining their best practices through innovation. The Schools Division Offices (SDO) in Malabon and Valenzuela cities took pride in the floating gardens created by TES and PVES as mentioned earlier in order to safeguard their vegetables and plants from flood.

Moreover, while all schools participate in national drills and conduct their own emergency drills, frequency of drills among schools vary. Interestingly, KES even conducts locked down drill since Caloocan City jail is adjacent to the school. Interviews and observation validated how the schools concretize DepEd Order 55, s. 2007 (Prioritizing the Mainstreaming of Disaster Risk Reduction Management in the School System and Implementation of Programs and projects Relative Therefore), which explained that school drills are a collaborative activity of the school participated by the barangay which generally acts as among the monitoring agencies during drills.

Significantly, variation in the implementation of programs in each city is reflected in the levels of participation and involvement of stakeholders such as the community, barangay and LGUs. Involvement of the parents in the discussion, planning and implementation of programs strengthen school and home partnership and family support to the students' learning. Interview and documents revealed that assigning of focal persons, committee leaders and members is a prerogative of the administrators. In fact, children with special needs are assigned to assist in emergency drills and during feeding program in one school while a student organization, i.e. YES-O club is involved in the waste collection and segregation. Further, unique practices of the schools in promoting the SD programs is very much evident as shown in Appendix A such as in DRRM, EPP and GPP.

Furthermore, interconnection of the selected national and regional SD programs has been observed. In fact, SSFS and Green School programs as national and regional initiatives were found to

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encompass the other four programs; hence may serve as an umbrella and unifying agent for all the SD related programs.

Monitoring by the Schools Division Office and sometimes even by DepEd NCR or DepEd Central office of how programs are implemented in schools is a common practice. However, preparation of a monitoring tool for SDO use was observed to be evident in at least two schools. This reflects commitment to the promotion of the SD programs in the particular locale.

However, there are challenges encountered by the schools like space prioritizing needs of the student population over vegetable gardens, such as in Caloocan City. Another challenge is lack of skilled and knowledgeable teacher to implement the programs. Though there are trainings provided such as in Eco-Savers implementation, trainings in other programs may be inadequate. Further, lack of awareness and understanding of SD and ESD terms, leadership management and priorities, lack of funds and available materials, proper documentation of activities and movement of people, numerous programs to implement which are sometimes similar to each other serve as barriers in the promotion of SD that obstruct the school's sustainability efforts. Discontinuity of program implementation due to transfer, promotion, retirement or demise of the persons-in-charge also affect the articulation of SD, as in the case of schools in the cities of Caloocan, Malabon, and Navotas.

2. *Relevance of the selected SD related programs in CAMANAVA*

To provide depth in the understanding of localization of SD in the four schools, significant statements from interview responses on the relevance of the six selected SD programs implemented were categorized. Four (4) themes emerged which   describe the significance of the programs such as are transforming individuals, expanding possibilities, anchoring to national goals and harboring benefits as presented in Table 3.

Table 3. Thematic analysis of relevance of SD related programs in CAMANAVA.

Themes	Categories
transforming individuals	knowledge building
	skills development
	promotion of values
	Initiating actions
	knowledge sharing
expanding possibilities	school based management and improvement
	collaboration and partnership building
	recognition of needs of school

Table 3 (Continued). Thematic analysis of relevance of SD related programs in CAMANAVA.

Themes	Categories
anchoring to national goals	adhere to policy
	encourage citizenship and nation building
	promote sustainability
harboring benefits	economic benefits
	personal benefits

The educators generally find significance in the programs implemented based on four (4) themes that surfaced in this study. Firstly, the localized programs were vehicles in transforming individuals by promoting holistic human development not only among the learners but as well as the teachers, parents and other stakeholders. The theme *transforming individuals* refers to the following categories which are deemed to be indicators of localized SD programs. Significant statements are presented accordingly to illustrate the indicators. These are illustrated by the following significant statements:

knowledge building:

The children are becoming more aware of that the environment has a connection with how to live, in living a good life you have to take care of you environment because that is all the needs come from. (T3)

skills development:

They (teachers) are getting more creative...on how are they going to support the programs... Ano yung mga initiatives na gagawin nila. (what will be their initiatives.) *...so nakakagawa si bata, nakikita mo kung gano sila ka creative.* (Hence, the child delivers, you can see how creative they are.) (A6)

promotion of values:

Siyempre yun pa kaya... mga bata namin na marunong magpahalaga sa halaman (Of course, our children know how to value plants because of the programs) (T18);

...the children are taught to be environmental friendly (T25);

I think the teacher ah they are more committed. Kase nakikita nila na papa- ano talaga, yung nakakarelate sila. (Since they can see how they are done, they can relate.) (A6)

initiating actions:

..ngayon po pati yung ibang teacher pati yung janitor (*nagtatanim ng gulay*) (now even other teachers including the janitor (plant vegetables) (T20);

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> *kasi nga segregation eh yung nasa bahay nila dinadala dito tapos dito
> binebenta...ngayon ...every Friday kapag may collection, magpapatimbang sila nag-
> uunahan ang mga bata...* (Since it is about segregation, the trash at home are
> brought here and sold...Now, when collection time comes every Friday, they will
> race in weighing in [their collected trash]) (T20)

Secondly, theme two refers to *developing opportunities* which are indicated by creation of opportunities for school based management and improvement; prospects for collaboration and partnership; and chances for recognition of school needs. School based management and improvement pertain to management of resources in school both human and material; maximizing available space; and maintaining a safe and healthy environment for the stakeholders, especially the learners. Moreover, localized programs serve as cohesive elements that bind the agencies and stakeholders towards a common good such as the school improvement. These are illustrated by the following categories and their corresponding significant statements.

School based management and improvement:

> *yung kinikita po yearly… yung grills po nun napagawa because of that* (annual
> proceeds ...went to the installation of grills) *(T20);*

> *... kahit na wala silang malaking lupa, kahit saan pwede kang maghalaman kaya
> meron kaming mga vertical garden diyan* (even if there's no enough space, you can
> do gardening that's why we have vertical garden) (T18);

> *…with the help of the community, feedback of the community, these schools are very
> clean. (A2)*

Collaboration and partnership building:

> *Nagiging involved po kami…Kahit sa community minsan yung mga parents
> cinocontact din naming yun..involvements ng parents eh...naeencourage naming
> sila maging involved kasi minsan pag darating na ung buwan ng November pag
> nagtatawag ng meeting,,, nagjojoin naman sila* (We become involved. Even the
> community, sometimes we contact the parents... involvement of parents..we get to
> encourage them to be involved that sometimes, during November, they also join in
> the meetings) (T20)

recognition of needs of school:

> *when you conducted these programs, when you watch these programs, involved ang
> mga stake holders don. So nakikita nila ano kailangan ng paaralan, anong
> kailangan ng mga estudyante* (The stakeholders are involved when programs are
> conducted thereby making them realize the needs of the school, the students) (A6)

Thirdly, the participants who are the localizers, find relevance in the programs as these aid in *anchoring of local actions to national goals* as translated by the Department of Education through the SD programs. Localization of programs is meaningful to the participants as it adheres to policy, encourages citizenship and nation building, and promote sustainability. Some of the participants signify that they

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implement the programs since they are mandated to do so. Some of the participants confidently explained that the programs relate or are in line with the the DepEd Vision and Mission which justify the rationale of the program. Thus, the third theme explains the significance of the programs as they adhere to policy which is best illustrated by the verbalization of one respondent "*to implement DepEd Order No. 21, s.2015 as part of one's duty as DRRM (coordinator) (T6)*."

Meanwhile, there were participants who find meaning in the programs as these encourage citizenship and contributes to nation building. One administrator participant elucidated that "*we can become strong and better citizens of the country if we are healthy, we will grow strong and our mind will also be productive because of the foods we eat*" (A2).

Most importantly, while not all of the participants admitted that they are not so much knowledgeable about SD and ESD terms, most of them explained that these programs are necessary not only for lifelong learning but also to maintain and for continuity of the programs. As such, localized SD programs promote sustainability as signified by the statement "*Green School is not only about Green but also... lessening the consumption of water and electricity, the water conservation, the health and sanitation, the wellness program, these are all incorporated here because these are part and parcel of good education program* (A8)"

Care and concern for the environment is evident among most of the participants as illustrated in their responses highlighting the Green School Program; and SSEFS encompassing the other programs that promotes ESD in schools. Interviews revealed that participants find significance in the SSEFS program since this encourages not only the students but the parents as well, to sort their garbage at home.

Finally, the last theme *harboring benefits* explains that the participants find worth in the translation of ESD programs in schools due to the economic and personal benefits that extend to the family and school. Interestingly, incentives add significance to the programs. Most of the participants related with pride and excitement the benefits gained from the programs most which are more pronounced through the Eco Savers and *Gulayan sa Paaralan* program as evidenced by the following verbalizations:

economic benefits:
...*so we can have some extra money to buy for the pencils of the* children (T3);

then isa pa rin magiging income generating project ng school (it becomes another income generating project of the school) (T6)

personal benefits:

for safety, not only themselves but all the surroundings ... also all these things, yung mga gamit natin (our properties) (A2);

makatulong sa mga malnutrition na bata (helps in addressing malnutrition) (A13);

Ang maganda po kasi dun, ... syempre po kapag yung bata nakapagpatubo ng halaman, masaya siya na nakapagpatubo siya then pinaghirapan niya, diniligan niya... mapupunta rin sa kanya kung ano yung inani. (One thing good about it, the child becomes happy when he or she was able to grow the plant he or she has nurtured...and enjoy the harvest.) (A5)

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> *every recognition we are recognizing potential individuals who happen to save*
> *much in different category: individual, by class, teachers and non-teaching (A8)*

It was observed that considering that most of the students in the target schools belong to even below the poverty line, many students and their families find the programs supportive of their financial needs. These benefits serve as motivating factors that drive the participants to join more actively in the implementation of the programs. Meanwhile, personal benefits include general safety and wellness of the individuals and school. Lastly, incentives come through recognition given to them for their efforts to promote the programs.

DISCUSSION

Achievement of the SDGs and national goals for SD lie on the ability of the localizers to turn them a reality in the cities and communities at the local level. Localizing SD programs simplify national goals by concretizing them through programs and activities as found in this study. Nolet (2016) explained that education for sustainability has the local context as basis but is also connected to global issues. SD programs are mainstreamed in the elementary school context through the physical environment and facilities that are supportive of SD; school practices and activities that promote sustainability and making SD programs relevant to the stakeholders.

Physical environment and facilities and school practices

While all the four schools strictly adhere to the program implementation policies of DepEd, and may be similar in some ways as shown by practices highlighted earlier, they remain to be unique with their distinct character. Difference in the presentation and implementation of the programs is evident as observed in the physical environment and facilities as well as practices of the schools due to several factors. The decentralization policy of the country (Republic Act No. 9155) is one factor that contributes to the differences in the implementation and localization of SD programs in the four schools. Decentralization of power and authority allows the administrators to initiate and design their own programs and activities to implement and mainstream programs in their respective locale. Similarly, implementing guidelines in the DepEd orders generally allow the administrators to have their own projects and activities in executing the programs. this decentralization empowers the educators and promote ingenuity and participation (Madsen, Nordin, & Simovska, 2016).

Another consideration of the school and teachers are the available resources, i.e. material, physical and human resources. The competency and priorities of the lead or focal persons of the programs also contributes to the variation in the implementation of programs. Also, there are schools where a certain teacher is assigned to several programs.

The leadership qualities of school administrators, their priorities, and the kind of institutional and stakeholders' support may either hinder or support the localization process. Administrators usually try to balance addressing the needs of the learners and school operational needs. Nevertheless, the findings agree with Buentjen (2016) that localization of SD programs is not merely an implementation process but as well as identifying national goals and priorities that match the needs set by the stakeholders thereby concretizing the agendas. Similarly, this approach contributes to the education for sustainability by making education and SD in the elementary schools culturally responsive and as such, locally relevant (Nolet, 2016).

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Meanwhile, it has been observed that most of the programs are interconnected and are integrated in the curriculum thereby strengthening and supporting one another. Nevertheless, closer analysis of data showed the presence of multiple programs and projects implemented in school creates localization challenges on the part of the localizers- the educators. The Philippines may learn from the experience and practices of other countries on the green school program being a system of managing the environment and award scheme that encourages and recognizes long-term, whole school environmental action (Dong-Xue Zhao & Meng, 2015). Similarly, while promotion of sustainability is an indicator of the localized program, sustaining the programs also poses as a challenge. Sustainable leadership then is an interesting aspect that needs further exploration in connection with localization of SD programs.

The study revealed multiple ways of knowing, understanding SD programs and engaging in them are encouraged in the four schools in their practices. One clear observation through this study is the significant participation of stakeholders who creates a community of practice. Buckler and Seal (2014) said that aspiring to develop a collective sense of identity is essential in localization. The schools follow a multi-stakeholder approach in translating the programs in their respective locality. A multilevel and multi-stakeholder approach is indispensable in the promotion of transformative agenda at the local level (Global Taskforce of Local and Regional Governments, 2016). In fact, the stakeholders' involvement is a characteristic of the successful implementation of green school in the US (Dong-Xue Zhao & Meng, 2015).

Deeper analysis showed that program implementation does not only follow a top- down approach but bottom-up method as parents and other stakeholders are involved in majority of the schools even from the planning stage. Orientation and trainings of teachers, students and even parents and stakeholders are strategies for capacity building and community empowerment which are essential to the attainment of the SDGs (Mohieldin, M., 2017). This study illustrates initiatives at the sub-national level and the linkages between national and local levels. Lucci (2015) averred that when working with the idea of localization and when thinking about implementation plans, involving harmonization with different levels of government for the delivery of goals, outcome indicators should be matched with national goals wherever possible, to assist in the development of better plans, resource allocation and making persons at all levels accountable.

One significant process in localizing SD programs is monitoring success in the local level which is evident in the four schools. Monitoring allows to determine how programs are approached and contextualized in schools. This recognizes the school as an active player in the localization process, autonomous yet needs support for the school to truly develop and integrate SD in their everyday practices. Localizing is usually understood as monitoring inequalities within countries to determine where need is focused. In the case of localizing SD programs, it implies monitoring progress which is complementary to the implementation of national goals. Lucci (2015) averred that "monitoring progress" and "implementing the goals" are two complementary meanings wherein localizing would not only mean to monitor performance but assume delivery and achievement responsibility as well.

It is clear that SD programs foster transformative education among individuals. They develop a myriad of knowledge, skills and values through the programs and activities. It is important to point that localization of resources accompanies translation of SDGs through SD programs which in turn promote creativity.

Some of the participants who admittedly not knowledgeable about SD and ESD were happy while some were relieved upon realizing that they have been promoting SD and ESD all the while, thereby making them more eager to support the programs. This substantiate the need for awareness and understanding of the basic concepts and principles of SD among educators to ensure greater success for the localization of SD programs which was found to be essential in the attainment of the sustainability goals.

Through the programs, individuals are moved to action by initiating activities and sharing knowledge to others. The programs serve as vehicles for holistic human transformation as the programs localized in the school encompass the development of the mind, body and heart. A wide range of cognitive functions are developed through the programs, from simple awareness to critical thinking and other higher order thinking skills which are essential in the development of sustainable behavior. The programs are found to be significant as it allows development of not only manipulative skills but as well as creative skills. Most significantly, the programs are meaningful as they allow the development of environmental values and other values. Indeed, SD cannot be accomplished without education as averred by UNESCO Director General Irina Bokova (Marquez, 2015).

Further, SD programs implemented in schools are found to develop opportunities. They support the school based management and continuous improvement plan which envisions improved schools through an improved planning and implementation processes (DepEd, 2015). Likewise, the programs prove to be significant in articulating and translating SD in the schools since they encourage collaboration and partnership building among the stakeholders essential in localization process. Orientation and dialogues with parents and other stakeholders on the programs allow them to see the needs of the school, while participation and involvement lead to empowerment. Duong (2016) underscored the importance of a strong focus on the community as a tool in localizing SDGs at sub-national level in the Asia- Pacific (Duong, 2016).

Localizing SD makes way to gain institutional support from the different government agencies, such as DENR and LGUs. This study supports Gera (2016) who explained that strong institutional framework that mandates public participation in environmental matters is evident in the country with participatory approaches in resource assessment, planning and management widely introduced in communities. Similar to the study of Madsen, Nordin, & Simovska (2016), this study illustrated that participatory processes supported by stakeholders and institutional agencies have actual effect on the motivation and initiatives started at the school level. Also, localizing SD was reported to be significant as it was seen to be instrumental in the identification of school needs thereby addressing them appropriately.

Meanwhile, relevance of the SD programs reflects the adherence to policies as elucidated by some of the educators in the study site. Localizing SD is described in the study as a process of anchoring the programs to national goals. This signal the importance of policies in localizing ESD (Gera, 2016). Significantly, Lucci (2015) further claimed that localizing ESD in view of a specific goal would not only mean monitoring performance but also assuming accountability for their delivery and attainment. Encouraging citizenship and nation building is deemed to be an indicator of localized program. The programs are significant as they are instrumental in the efforts to anchor to national goals which is mirrored in the motto "*maka-Diyos, maka-tao, maka-kalikasan, maka-bansa (for God, Peopls, Nature and Country)*". Thus, this study opens door of possibilities for the elementary schools to translate national and even sub-national goals in their respective locale and promote sustainability or better quality of life across inter-related sustainability dimensions as envisioned by Filipino.

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Lastly, localizing SD programs are demonstrated by economic and personal benefits the school and the stakeholders gain from their participation in the programs. Success in localizing SD in public elementary schools was seen to be related to their ability to respond to the needs of the school and its stakeholders. A big percentage of the student population in the four schools belong to the poverty line with some even below the poverty line. In some cases, it is natural for them to be motivated to engage and support the programs considering the economic benefits they can get through the programs. But it is important to note that while the programs allow harboring ofeconomic benefits, they also serve as vehicles to keep the learners in school and lessen absenteeism. While education is free in public schools in the Philippines, children still fail to go to school due to lack of money to buy their needs in school. Meanwhile, personal benefits are illustrated by sense of fulfillment, safety, satisfaction, enjoyment, health and wellness and recognition from school and other people.

In a nutshell, this study revealed that the schools in CAMANAVA share some commonalities as well as unique characteristics in mainstreaming programs that promote SD in terms of practices and physical environment and facilities. Programs found to be of value to the stakeholders such as the SD programs have the capacity to translate SD goals to the local level as reflected in the four generated themes. Drawing on a holistic framework of localization of SD, the study provides exemplars of how localization of SD empowers members of the school community and society in general to overcome environmental, economic, social and cultural challenges of our time. The study further support the adaptive and transformative capacity of education through the public elementary school system to translate global and national goals to the local level.

CONCLUSION

This study significantly provides empirical evidence to the argument it set forth that localization of SD programs is a process of defining, implementing and monitoring strategies for achieving global, national and subnational goals and targets. Likewise, the programs are viable vehicles in the promotion of quality education in the locale with the help of the top-down approach which increases greater likelihood of program implementation when mandated to school serving as vital localizer of SD in the grassroots level.

SD in the Philippines is being localized through translation of SD related programs which are characterized of ESD principles following both top-down and bottom-up approach in some cases, thereby empowering the school's stakeholders as found in the in-depth study of the four elementary schools in CAMANAVA. Localization of SD can be seen in the light of the decentralization policy of DepEd, which allows administrators to plan, organize and encourage contextualization of programs in their respective area of jurisdiction while recognizing the needs and culture of the place. Furthermore, it can be said that localization of SD is viewed as the implementation, promotion, integration and monitoring of the programs as to physical environment and facilities and practices.

More so, adaptation of SD programs in the elementary schools is deemed important for developing and expanding opportunities for the school and individuals; anchoring of activities to national goals; and for embracing benefits they provide the stakeholders. Most importantly, this study accentuated that central in the localization process is the human person with promoting holistic human transformation as basic in the mainstreaming of SD programs.

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Localization of SD in public elementary schools at risk of environmental hazards due to urbanization leads to greater appreciation of diversity and strengths of the local people amidst challenges. Educators emphasize programs that they deem beneficial not only to learners and other stakeholders but to the environment in general, which is a significant in understanding and promotion of ESD in the country. The findings of this study serve as significant lessons to educators with insights on how programs and activities serve as tools to foster sustainability and for learners to excel in life through the active involvement in the SD programs. Lastly, the localization of SD programs in elementary schools is a significant contribution of the locale in the country's commitment to sustainability since the inception of SD in the Philippine Agenda in 1996 and as underscored in EPA 21, the country's blueprint for SD.

RECOMMENDATIONS

The country needs to establish an institutionalized framework where the education sector takes a lead part in the integration of SD in the educational system, with the DepEd as the lead agency responsible for its promotion. Institutionalization, articulated in DepEd policies and curriculum will guide educators in more effective and efficient translation of the programs.

Greater coordination among government agencies working through an umbrella program, such as Sustainable and Eco-friendly School or Green School program will unite the other SD programs thereby providing clearer direction; greater impact avoiding duplication of programs that sometimes burden the educators who act as localizers of SD; facilitating monitoring and documentation of programs and activities.

While top-down approach in localizing SD was observed to be effective in CAMANAVA, using bottom-up approach is also beneficial creating sense of ownership, and empowering the people in the grassroots level.

STATEMENT OF AUTHORSHIP

The first author was responsible in conceptualizing the study, data gathering and analysis; preparation, editing and revision of the paper. The second author provided valuable suggestions as to the identification of the framework, formulation of recommendations, did a critical review and evaluation of the paper and helped in editing and revision.

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