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14. Whereas wildlife provide numerous free services that make our life possible and pleasant, cleaning the air, water, and the soil of pollutants, providing food, medicines and a beautiful place to live, wildlife are in grave danger from the loss of habitat, the spread of exotic species, pollution, and direct consumption by humans. Wildlife often cannot protect themselves from humans, so without our help they cannot survive. The presence of humans greatly reduces the usefulness of a habitat to wildlife. Wildlife reserves act as sources for replenishing our supplies of animals and plants. Therefore, we urge all nations and peoples to make the protection of wildlife and wildlife habitat a top priority. In particular we urge them to set aside a large portion of their territory, interconnected by the wildlife travel corridors, for the exclusive use of wildlife, off limits to humans."

In the first paper of this issue Rio C. Aguillon-Depalubos and Rogelio P. Bayod examine how ethics can promote some good practices in rural infrastructure projects in Mindanao. The design and execution of truly sustainable projects requires assessment through decades, yet as the huge impact of COVID-19 policies has shown, our environmental impact can be significantly impacted through the space of a couple of years. These are among the conclusions of the paper by Resty Ruel V. Borjal.

Aldrin Quintero has developed a holistic approach, adaptive, resilient, and responsive framework for Disaster bioethics. It is not exclusive as the only approach that can assist us in disaster bioethics. Jovar G. Pantao explores approaches for peace education, as war is one of the worst, yet most common, disasters that humans enact on not only other humans but the whole planet.

The papers in this issue are all substantial efforts to articulate values that may help us survive better while living out our lives responsibly while our paths, and shared journeys, can be sustainable for all beings now and in the future. We owe this to our ancestors who did this in their own ways, and we have a lot still to learn.

- Darryl Macer (Email: darryl@eubios.info)

Editorial: Our planetary journey

Let's take a minute to reflect on our oneness with all of life. We are one of millions of species living on our shared planet, and in fact living entities comprised of harmonious interactions between a hundred species that create each of us to be the persons who for some years of our planet's five billion year journey exist as beings sharing with some other beings a journey that we call life. The papers in this issue of *EJAIB* present different dimensions of that shared life in a holistic sense.

21 years ago in the **Eubios Declaration for International Bioethics** (2002) a group of human lives agreed to this principle, which stands even more relevant today as it did then:

"Life as a Whole

13. We recognize the dependence of all life (biota) on intact, functioning ecosystems, and the essential services that ecosystems provide. We urge action to halt environmental damage by humans that reduces biodiversity or degrades ecosystem processes.

Mindanao sustainable agrarian and agriculture development (MinSAAD) project: Ethical concerns of rural infrastructure projects in B'laan settlement area, Davao del Sur

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Abstract

Land reform, combined with complementary support services and infrastructure development, may effectively reduce rural poverty. However, empirical evidence on the extent of the impact is limited as well as the pathways by which the impacts reach the beneficiaries. This paper assesses the impact of Mindanao Sustainable Agrarian and Agriculture Development (MinSAAD) project not only in terms of economic development but also the social and ethical concerns surrounding the project conceptualization and implementation, especially among indigenous communities.

Introduction

Rural poverty remains one of the biggest challenges in development. Though it is not explicit, agricultural ethics traces its roots in a long history of religious, political, and philosophical contemplation on agriculture and the environment. God promised the children of Israel an abundance of land early in the Hebrew Bible (or Old Testament) (Deut. 3:8; 15:4). The Bible also forbade wealthy landowners from purchasing small farms. (Lev. 25:13, as noted in Spiegel 1991). Aristotle, a pupil of the Greek philosopher Plato, spoke on the significance of agricultural knowledge in the individual and societal pursuit of the "good life" hundreds of years after Plato had explored the need of rebuilding agriculture following the mythological Deluge. From John Locke to Thomas Jefferson, enlightenment intellectuals emphasized on the role of "tillers of the soil" in politics, economics, and philosophy, and on the basic worth of agriculture (Spiegel 1991).

A systematic approach to the ethics of farming, rural infrastructure, resource management, food processing, distribution, trade, and consumption developed in the latter half of the 20th century and is now known as agricultural ethics. Concerns about specific problem areas that occur in the food system are combined with components of philosophical ethical analysis to form agricultural ethics. Agricultural ethics is now supported by a large, global community of academics, scholars, farmers,

policymakers, and activists who think and write about these issues. It is promoted by philosophers and scholars from religious studies, the social sciences, and the agricultural and rural infrastructure disciplines.

Among the project interventions, farm-to-market roads appeared to have the most significant impact on the communities. The benefits of the project interventions, however, were disproportionately captured by the wealthier households, resulting in worsened income distribution in the communities. In the transformation from labor use to more mechanized modes of production and transportation, the poor, i.e., the wage laborers, generally lose out, at least temporarily. Future interventions in rural infrastructure provisions should include measures to assist the poor to increase their capacity to capture new employment opportunities generated by development interventions.

This paper explores the ethical concerns of rural infrastructure and support services' relevance to project design, the efficiency of implementation, effectiveness in achieving results, sustainability of benefits, changes that could be attributed to the project, collaboration among partners, and key lessons learned from the implementation of rural infrastructure subprojects provided by the Mindanao Sustainable Agrarian and Agriculture Development (MinSAAD) project of the Department of Agrarian Reform (DAR) and financed jointly by the Government of the Philippines (GOP) and Japan International Cooperation Agency (JICA). The paper discusses how ethical concepts and tools can address various problem areas in *agri-infra* systems and how consideration of agricultural ethics might be institutionalized.

Methodology

The paper utilizes secondary data as regards to the economic and social impacts of the project. In addition, the paper incorporates the narratives of the people, especially, among the indigenous peoples, as regards to the effects of the project on their economic and social lives. Finally, the paper also presents the ethical implications of the development project implemented among the indigenous peoples in Davao del Sur.

Findings and discussion

The results are presented in tables in terms of assessing the initial impact of the MinSAAD Project among the indigenous peoples in Davao del Sur. For purposes of clarity, the assessments were merely focused on the following parameters such as relevance, effectiveness, beneficiary participation and satisfaction, efficiency, and sustainability of each rural infrastructure component such as farm-to-market road, bridges, post-harvest facilities, and rural water systems.

Table 1. Completed FMR subprojects in B'Laan settlement area, as of July 2021

Subproject Title	Location	Quantity	Cost (Php)	Date Completed
Rehabilitation of Sitio San Roque, Bangkal Gunituyom-Sitio Kilong, Manga FMR	Matanao, Davao del Sur	3.15 km	20,941,189.81	20-Sep-18
Rehabilitation of Sitio Biernesan-Sitio Gulara-Centro Towak- Satuma FMR	Matanao, Davao del Sur	3.98 km	24,831,529.18	03-Jul-18
Rehabilitation/Construction of Boundary Upper Katipunan, Matanao-Glamang-Purok 5, Malawanit-Sitio Blazan, Malawanit Elementary School-Blazan, Purok 7, Magsaysay FMR	M a g s a y s a y , Davao del Sur	6.35 km	48,979,646.26	02-Jul-19
Rehabilitation of Sitio Acacia-Macabulos-Upper Asbangilok FMR	M a g s a y s a y , Davao del Sur	5.11 km	55,056,773.21	29-Nov-20

Table 2. Completed Bridge Subprojects in B'Laan settlement area, as of July 2021

Subproject Title	Location	Quantity	Cost (Php)	Date Completed
Construction of San Roque Bridge	Matanao, Davao del Sur	30 lms	14,687,668.27	29-Nov-18
Construction of Malawanit Bridge	Magsaysay, Davao del Sur	25 lms	13,561,128.34	02-Jul-19

Table 5. Completed PHF Subprojects in B'Laan settlement area, as of July 2021

Subproject Title	Location	Unit	Cost (Php)	Date Completed
Construction of San Miguel Post Harvest Facility (Warehouse)	Magsaysay, Davao del Sur	1 WH	2,768,034.57	04-Nov-16
Construction of Malawanit Post Harvest Facility (Warehouse)	Magsaysay, Davao del Sur	1 WH	900,714.83	29-Nov-18
Construction of Kapok Post Harvest (Warehouse & Solar Dryer Facilities)	Matanao, Davao del Sur	1 WH & 1 SD	4,847,930.05	08-Feb-17
Construction of Bangkal Post Harvest Facility (Warehouse)	Matanao, Davao del Sur	1 WH	2,058,961.60	20-Sep-18
Construction of Asinan Post Harvest Facility (Warehouse)	Matanao, Davao del Sur	1 WH	727,147.13	29-Nov-18

Table 6. Completed RWS Subprojects in B'Laan settlement area, as of July 2021

Subproject Title	Location	No. of HH	Cost (Php)	Date Completed
Construction of Glamang Level II RWS	Magsaysay, Davao del Sur	360 HH	7,681,914.15	16-Jun-17
Construction of Malawanit (Sitio Blazan) Level II RWS	Magsaysay, Davao del Sur	240 HH	6,434,893.30	08-Jun-18
Construction of New Katipunan Level II RWS	Matanao, Davao del Sur	401 HH	9,343,451.77	28-Sep-17
Construction of Cabasagan Level II RWS	Matanao, Davao del Sur	256 HH	8,650,717.76	02-Jul-19

Farm-to-market roads and bridges (FMRB): Four of the 39 approved farm-to-market roads are programmed under MinSAAD funding in the B'laan Settlement Area in the municipalities of Matanao and Magsaysay, Davao del Sur. As of July 2021, accomplishments were reported in Table 1.

In Matanao, Davao del Sur, where the FMRBs were already completed, travel time from the farm to the road decreased by 16%. The decrease in travel time due to FMR indicated that the road had been brought closer to the farms and faster means of transportation could already reach some farms.

The construction of the San Roque Bridge and Malawanit Bridge in the municipalities of Matanao and Magsaysay respectively, has provided local people with temporary employment since a number of residents were hired as construction workers and laborers during the implementation period.

Informant 1 stressed that “We used to walk for hours before reaching our school until the road was opened in the early 70s, thanks to the perseverance of our elder leaders before. Now that the road was concreted, it paved the way for new opportunities as well. We can now go to the center town in a shorter period of time and various retailers can now reach us, and without the cooperation of the affected barangays, this project will cease to exist.”

The decrease travel time results in economic benefits since the residents have enough time to attend to their farms and businesses; they may have more time to attend to the needs of their families and provide quality time to their children.

Table 3. Means of Transport: farm to road

Means of transport	Farmers using means of transport		Change
	2014	2017	
	Carabao	11.4%	
Cart /sled	8.6%	8.1%	-6%
Horse	54.3%	56.8%	+5%
Manual	5.7%	2.7%	-53%
Motorcycle	5.7%	8.1%	+42%
Tricycle	8.6%	0.0%	-100%
Truck	5.7%	18.9%	+232%

The increase in usage of truck for transportation (5.7% to 18.9%) indicated penetration to farms that were hard to reach before the FMR project was undertaken. There was a 25% decrease in transport cost in Barangays Manga and Bangkal in Matanao, Davao del Sur. But it did not mean that the drivers/ haulers were charging less. The decrease came from farmers shifting to other means of transport that were cheaper in the first place. While the increase of truck and other forms of transport is a sign of

progress, it also implies possible increased risk of environmental harm. In addition, the increase of people and traders traveling to the indigenous communities implies a possible risk to cultural preservation when there are no proper regulations to mitigate some of these social and environmental effects.

Table 4 compares changes in travel time and transport cost in barangays with completed FMR, barangays with ongoing or partially completed FMR, and barangays without MinSAAD FMR. (though some barangays without MinSAAD FMR may already have a road constructed before MinSAAD.) The benefits brought about by the completed FMR can be readily seen. But there is one glaring discordant figure in the table and that is the 21% increase in transport cost from farm to road in barangays with ongoing FMR. A possible explanation is that farmers had to bring their products farther down the road, past the portion under construction.

Table 4. Comparative changes in travel time and transport cost

	Completed FMRB	Ongoing FMRB	No MinSAAD FMRB
Farm to Road			
Time	-16%	-7%	-2%
Transport Cost	-25%	+21%	+1%
Barangay to Town Center			
Time	-32%	-8%	-12%
Transport	-11%	-2%	-0%
Cost - Palay			

Relevance: All the FMRBs programmed under MinSAAD clearly manifested positive results such as a reduction in travel time and the facilitation of transport of agricultural products in distant communities to the markets. These FMRBs are usually located in vast agricultural production areas but with poor road accessibility. Every bridge subproject under MinSAAD connects FMRs to improve the transport of agricultural products and mobility of people.

The FMR connecting Barangays Bangkal and Manga in Matanao, Davao del Sur spanned from Sitio Bangkal-San Roque- Gumituyom-Sitio Kilong and included the construction of 30 l.m. RCDG Bridge. Before the MinSAAD- assisted FMR project, the existing FMR that traversed the rich rice field was in a very bad condition and even motorcycles had difficulty crossing. The most common means of transportation to bring the palay (rice) products to the market in Matanao Poblacion was through horseback up to Manga or Bangkal Proper then through tricycle or four-wheel vehicle to the Poblacion. A horseback supported travel charged P30.00 per cavan of palay up to Bangkal or Manga

Proper. Moreover, horses and single motorcycles had to cross San Roque River through its river bed in the absence of a bridge connecting the two barangays.

Informant 2 said: "Not only this road will bring faster and better access for farmers, this FMR will also benefit people by bringing local labor in our municipality." With a rehabilitated road and new bridge constructed, the flow of agricultural products from barangays Manga and Bangkal will become unimpeded, faster, more comfortable and cost less. Upon completion of the two projects, namely: FMR and Bridge, a circumferential road connecting barangays Towak, Manga, Bangkal, Asinan, Cabasagan, and Poblacion, all in Matanao is formed, thus, transport of agricultural products from and to these areas will become easier, faster, and at much lesser cost.

A good road network is expected to bring improvements in hard-to-reach production areas. Hence, the four completed FMRs are now boosting economic development around their service areas. Four-wheel vehicles, tricycles, and motorcycles from Poblacion can now travel smoothly to Barangays Manga and Sitio Kilong traversing along vast rice paddies. Some people from Sitio Kilong expressed high satisfaction with the improvement of the FMR because it will be easier for them to go to the Poblacion and to Barangay Bangkal once the bridge construction is completed. Before the project was implemented, sacks of palay (rice) were transported to Matanao Poblacion through horseback and motorcycles which had to cross San Roque river through its river bed.

Informant 3 stated: "Farmers spend P20-P30 per sack of harvest when they transport these to other areas. Now, we have wider road and a bridge over the river that make it easier and cheaper for farmers to reach new buyers. Transport cost is reduced by around 75%."

The preparation of the plans and POW for all FMR subprojects programmed under MinSAAD had gone through the standard procedures adopted by the DPWH. Thus, the plans and POW of every FMR were prepared with firm bases. These were further reviewed by the MPMO and the Consultant's Team of experts on infrastructure projects.

The strategy of providing Portland cement concrete pavement (PCCP) on steep sections of the FMR proved effective to maintain the accessibility of the entire road length. The case of the Upper New Katipunan-Malawanit FMR in Magsaysay, Davao del Sur showed that steep sections with PCCP remained stable. Most FMR subprojects were implemented beyond their original target completion dates. In the case of the Sitio San Roque, Bangkal-Gumituyom-Sitio Kilong, Manga FMR, the implementation went beyond by about one month from its original date of completion due to unfavorable weather condition at the project site. Some construction work went beyond by almost five months from its original date of completion due to variation order, unworkable

days due to heavy rains, and right-of-way issues, among others.

An informant explained: "MinSAAD Project really adheres to standards and specifications and strict compliance on the approved POW and plans. The remove and replace strategy imposed by the MinSAAD Inspectorate Team has made us keener and stricter on our construction implementation and locales are involved as laborers in the roads and bridges construction."

Sustainability: Upon completion of every FMR project under MinSAAD, it is turned over to and will be under the care of the concerned Municipal LGU. The responsibility for its regular maintenance shall form part of the Annual Investment Plan (AIP) of the municipality. The Matanao and Magsaysay LGUs are ready to take on the responsibility of maintenance work for the completed and turned-over FMRB subprojects. This was substantively discussed with the SPMO and the Executive Secretary of the Municipal Mayor. The Municipal LGUs has sufficient heavy equipment that can be utilized in the regular maintenance of the road and bridge projects once completed and turned over to them. This heavy equipment includes the following: dump trucks, six units; road grader, backhoe, road compactor and excavator, one unit each; and pay loader, two units.

An informant said: "We are going to protect and take care of this road and bridge since it is a legacy that is worth keeping."

Post-harvest facilities (warehouse & solar drier): As of July 2019, five (5) post-harvest facilities in B'laan Settlement area were completed and turned-over. These facilities were provided to different peoples' organizations in support to the AAAD component of MinSAAD.

Relevance: The existing solar dryers in the area are not enough to accommodate all the rice products from the production areas especially during peak harvest season. Harvested palay (rice) will be threshed on site using a portable rice thresher and palay (rice) will be put in new or clean sacks/bags. After threshing, palay (rice) will be procured by the consolidating PO and brought to drying facility. Dried palay (rice) will be brought inside the houses serving as temporary warehouse and will wait for the milling schedule. The construction of Kapok Post Harvest (Warehouse & Solar Dryer Facilities) as managed by Matanao Balipao Farmers Irrigators Association (MABAFIA) as the lead ARBO, maximized the benefits from agricultural produced by improving its quality and improved the farm economy through the value-added benefits derived from the increase in the price of the agricultural products through protection of the stored agriproduct from inclement weather and pests, and reduction of storage losses or deterioration of quality agri-products.

Effectiveness and beneficiary satisfaction: The project was well implemented through the combined efforts of MinSAAD MPMO and Consultants, Municipal LGU and the beneficiary-organizations. Utilizing the warehouse as the processing center and storage facilities of the organization is expected to increase the efficiency of production once an area is made available. The solar drier has been used for drying palay, cocoa beans, corn and other crops, and has started to generate income for the organization. Despite the delay in the turn-over of the project due to delayed release of the Municipal LGU cash counterpart, the organization was allowed to immediately use the facilities after its completion.

Efficiency: The cost of the implementation of warehouses and solar driers varies according to site condition. Sites which are hardly accessible incur more expenses in the delivery of construction materials. Generally, the cost of the PHF constructed under MinSAAD is within the standard construction parameters. The implementation of the warehouse and solar drier. The subproject was officially completed based on the original target date of its completion.

The Municipal LGUs provided support in the form of cash, equipment, manpower, and fuel in the preparation of site where the project was constructed. The Peoples' Organizations monitored the implementation of the project and hired somebody to check regularly the materials being delivered at site. The connection of electricity from the electric cooperative was put up as counterpart of the organization. Labor counterpart consisted of mainly unskilled workers in the construction who were Barangay residents.

An informant said: "POs should manage the project well to generate more income and to buy additional units of corn shellers and other equipment to cater more farmers in their respective areas and adjacent barangays."

Sustainability. Once the PHF is turned-over to the respective beneficiary-organization, the operation and maintenance (O&M) of the PHF is assumed by the concerned organization. During the FGD sessions with beneficiary-organizations with completed warehouse and/or solar drier, it was found out that they have the set of policies to carry out the O&M activities. Specifically, they have already set the rates of fees for the use of the facilities.

Rural Water Systems (RWS): Four of the total of 26 level II type rural water system (RWS) subprojects (i.e., communal faucets or tap stands) were programmed under MinSAAD in B'laan Settlement Area. Table 7 shows the details of the completed RWS subprojects in Matanao and Magsaysay, Davao del Sur benefiting some 1,257 households. These RWS subprojects were being implemented by respective Municipal LGUs through private

contractors. These beneficiary LGUs also put up corresponding counterparts as their equity for every subproject.

The awareness of beneficiary households about the MinSAAD RWS in barangays where there is such a subproject is 76.8%. Some 61.2% of households avail of the services of these RWS while 18.4% of households have their own shallow wells with pressure tank or might be illegally connected to the RWS leading to faucets inside their houses.

The average monthly rate for water consumption from RWS being charged by WUAs is P200.00 per month. However, beneficiary households are willing to pay only P65.00 per month or 20.20% lower than the average rate charged by WUAs. The average expense for water per month by households is P68.00. This indicates that some household consumers are not paying at all or are not paying in full. The average availability of water from tap stands of RWS constructed by MinSAAD is 22 hours per day. This indicates an adequate supply of water from these RWS. The average daily household consumption for drinking water is 14 liters, while, for other domestic purposes, 100 liters.

The average time spent for fetching water from these RWS is six minutes including time from house to tap stand, waiting time, and back from tap stand to house. Baseline data reached 14 minutes. This indicates that with RWS provided by MinSAAD, time spent for fetching water has decreased by 57%.

Some 84.10% of the households drawing water from these RWS knew that their water source has been subjected to potability test in 2017. Therefore, some 94.4% of these households felt assured that their water was safe for drinking. Households that reported incidence of waterborne diseases was 3.9%, while the baseline data was 7.9%, which meant a 51% reduction.

Table 7. Benefits from rural water systems

Benefit	HH Benefiting
Shorter time for fetching water	38.8%
Less expenses for water	15.5%
Better hygiene	24.3%
More water for flushing	14.6%
Reduced incidence of water borne diseases	10.7%
More drinking water	61.2%
More water for washing and cooking	35.0%
Water for gardening	7.8%

Relevance. Safe and potable water is a basic necessity of every individual because. The need for a reliable water system in every community should be given utmost priority. Before the construction of the water supply system in Barangay Glamang,

Magsaysay, Davao del Sur, residents were drawing drinking water from a spring located around two kilometers from their residences. Drawing water from this source usually took an hour because of the distance. Others who have the means would rather pay P10.00 per container (18 liters) to water fetchers on motorcycles. A household consumes around five containers per day or a total expenditure of P50.00 per day for water.

Table 8. Sources of drinking water

Source of Drinking Water	HH Availing
Deep well pump	1.0%
Open spring	3.9%
Spring box	22.3%
Tap stand	61.2%
Own faucet	18.4%
Bottled/Purified water	1.0%
Others	1.0%

In the past, diarrhea epidemic infected residents in Barangay Glamang due to use of unsafe water. With MinSAAD water supply project, the lingering problem on accessible and supply of potable water in the barangay has been finally solved. At present, a total of 215 households are served with potable water through 60 units tap stands.

Effectiveness and beneficiary satisfaction: With the availability of potable water from the MinSAAD water supply project in Barangay Glamang, improvements in the everyday lives of residents were noted. Since the water supply project became operational, nobody was reported to contract any water-borne disease. Everybody can take daily baths easily with comfort. Washing clothes and cleaning their houses become easier than ever.

Watering their backyard gardens and ornamental plants can now be done regularly, and time saved in fetching water can now be used for other economic activities such as cacao farming and other farm activities. Two (2) tap-stands each were shared with a public elementary school in Barangay Malawanit, Magsaysay and Barangay Cabasagan, Matanao. Pupils in these schools are now being taught the proper sanitation practices, such as, regular brushing of teeth, proper use of toilets, etc.

Efficiency: An ideal water supply system is drawing its potable supply from a natural spring and bringing it down to its beneficiaries through gravity type distribution system.

The Glamang RWS uses a pump to draw water from a drilled deep well because there is no available spring as a good source of water nearby. However, the Magsaysay LGU through the assistance from

MinSAAD MPMO and Consultants Team (MCT) was able to successfully construct a water system level II now benefiting about 215 households on actual headcounts with 60 tap stands.

Sustainability: Every beneficiary-organization of RWS from MinSAAD is fully aware of its responsibility to operate and maintain the water supply subproject. These organizations have come-up with sets of guidelines to follow to sustain their operation. The Glamang Farmers and Workers Association (GLAFAWA) which is the beneficiary group of the water supply subproject in Glamang has formulated policies as the base for the operation and maintenance of the water supply system. Among these are the following:

- a) Monthly tariff of P204.00 shall be collected from every household-consumer
- b) Forty percent (40%) of the monthly water collection shall be allocated for the O&M expenses, such as, electric bill, replacement of any parts/materials destroyed, purchase of chlorine, etc.;
- c) Forty percent (40%) of the monthly water collection shall be allocated for the allowances of workers, such as, plumbers, meter reader, bill server, caretaker, manager, bookkeeper, treasurer, etc.; and
- d) Twenty percent (20%) of the monthly water collection shall be saved as Trust Fund of GLAFAWA deposited in a bank.

Policies formulated and agreed upon by the association are being strictly enforced, especially, in the collection of water tariff. If the association tolerates late payment of some consumers, this may create precedence for others not to pay their bills on time. The life of the water supply system depends on the available resources to keep it always in serviceable condition especially that it is operated using a pump and electricity. The municipal LGU, through the Municipal Engineering Office (MEO) is continuously monitoring and assisting the GLAFAWA in the operation and maintenance of the water supply system, particularly on the technical concerns.

Management and collaboration: The positive response of beneficiaries to delivered subprojects indicates a generally good match between Project design and interventions, on one hand, and the needs of farmers, their organizations, and their community at large, on the other hand. In most cases, promoted crops match beneficiary needs and preference, as well as local conditions. Introduced technologies are relevant. Most equipment and facilities provided meet client needs and preference, although in isolated cases some equipment remain unused.

The MinSAAD design/framework is aligned with higher level plans and local development plans. FMRs and bridges, as a category of subprojects, meet the needs of the community as a whole. They open new areas for agricultural development and they can serve as the initial spoke or artery of a future road

network. In some cases, however, they appear to be stand-alone subprojects as there is no clear integration with other development efforts.

Relevance depends to some extent on the readiness of farmers to transition from survival to food security to agri-business. As there is a tendency in the Project to work with models and standard subprojects, this readiness has not been sufficiently assessed such that even within a barangay some farmers may feel left out even if the delivered subproject is relevant to a majority of farmers.

Effectiveness and beneficiary satisfaction: The main MinSAAD Project framework of convergence for integrated area development along the value chains of promoted key commodities is sound and has been shown to work in some other projects in Mindanao and elsewhere in the Philippines.

The Project strategies are coherent within the Project framework and have been met with varying degrees of success. They are not uniformly successful due to problems with the timing and sequencing of their application and the lack of necessary adaptation to different specific contexts.

Efficiency: The main issue with project efficiency is the delay in the completion of subprojects. The causes of the delays are the various stages of subproject development, and not just in the implementation or construction stage. Some delays arise from the build-up of negative slippages. For small subprojects, the longest delay is in the procurement stage.

Implementation stage is hampered by lack of consultations leading to mismatch between agreed/preferred equipment and actual delivery; this translates to lost working days. A host of other issues serve as barriers at this stage such as inclement weather; difficult access to subproject site; threats to peace and order; road right-of-way; difficulty in getting deed of donation; and substandard contractor performance. In some instances, the cost-benefit ratio was high. If it was clear what other development was planned in the area, then it would have been easier to justify the high subproject cost as a necessary initial investment.

Sustainability: There are four inter-related strategies being worked-out to ensure Project sustainability: (a) Creating a support network for assisted POs, facilities, and agri-businesses; (b) Handing over responsibility for maintenance, repair, and even expansion to LGUs in the case of FMRs and POs in the case of irrigation systems, rural water systems, and processing and post-harvest facilities; (c) Making subprojects such as agri-businesses and rural water systems self-liquidating; and (d) Creating a mechanism for continued monitoring of subprojects after the end of the MinSAAD Project.

Importance of ethics in agriculture

In this paper, three main secular ethical traditions or theories are interchangeably linked as to

justifications for the rightness or wrongness of the implementation of the agri-infra interventions of the MinSAAD Project, namely: (1) Rights theory. This theory holds that individuals have rights (i.e., justifiable claims against others that others do or do not treat them in certain ways). Rights theory is based on the idea that individuals are entitled to not be harmed against their will—“harm” means both physical harm and damage to property and interests. If an action causes or will cause harm to individuals, rights theory declares this action unethical, and no benefits (or a very limited set of benefits) can override this determination; (2) Utilitarian theory. Utilitarianism is a “consequentialist” theory, which means that right and wrong are determined not by appeal to some absolute limit (e.g., rights), but by taking into considerations all the consequences of an action (Maboloc, 2020). There are different interpretations of what counts as a good or bad consequence, but in its most general sense, utilitarianism holds that people should always act to maximize beneficial consequences and minimize harmful consequences. As it is sometimes put: Ethical actions produce “the greatest good for the greatest number of potentially affected living beings.” In practice, this usually means attempting to produce “net benefits”—more beneficial consequences than harmful ones. This “caveat” is based on the recognition that most (if not all) actions have some potentially harmful implications, even if unintended, and (3) Virtue theory. This theory holds that ethically we ought to act by a set of ideals or character traits—the kinds of traits a just, fair, good person would exhibit through his or her actions (Internet Encyclopedia of Philosophy). An action that either fails to follow these ideals or puts other people in a position such that they cannot follow their ideals, is wrong. Indeed, not following virtues, or preventing others from following virtues, is harmful to oneself and others.

Rural poverty is a serious problem in the Philippines, and the Agrarian Reform Communities (ARC) are among the most disadvantaged population groups. Baseline studies conducted in 1997 by the University of the Philippines Los Baños determined that more than 70% of agrarian household members lived below the poverty line (Morales, 1999). This study reveals that the average agrarian household annual income was US\$792.72 compared with the national poverty threshold of US\$1378.36. Recognizing that poverty is most prevalent among landless farm workers and sharecroppers, the government’s dominant way of addressing poverty has been to transfer ownership and control of land assets to such agricultural reform beneficiaries. An integral component of land distribution is the provision of rural infrastructure and support services to complement agricultural productivity and enhance the welfare of impoverished farm workers and sharecroppers (Morales, 1999).

Agrarian reform is recognized as a prerequisite for growth with equity in developing countries as

evidenced in Japan, the Republic of Korea, Taipei, China, and the People's Republic of China, which have successfully implemented this reform (Morales, 1999). The redistribution of land helps reduce poverty by granting full ownership and control to the farmer-beneficiaries and providing the necessary support services and infrastructure to make the land productive while laying the foundation for broad-based development. Through the successful implementation of land reform programs, these countries have achieved sustained economic growth and successfully reduced absolute material poverty among their populace. The Comprehensive Agrarian Reform Program (CARP) is an integral part of the Philippine Government's long-term strategy for reducing poverty, stimulating economic growth, and promoting social justice. Actual lands distributed, to date, reach some 1.4 million hectares benefitting some 2.4 million farmers, which can form the base for an enhanced agriculture sector. The government also harnesses the economic potentials of awarded agricultural lands by transforming agrarian reform beneficiaries (ARBs) into profitable entrepreneurs by capacitating them in better and better agricultural production and enabling them to engage in value-adding activities, enterprises, and agri-business and to participate competitively in the market. The Department of Agrarian Reform (DAR) pursues this through Agrarian Reform Communities (ARCs) and ARC Clusters as catalysts of growth and further expands the program to cover more ARBs, as well as non-ARBs in the communities, by pursuing ARC connectivity as a means to facilitate access to input sources, production and market information and facilities, technology, social processes and political institutions.

While the availability and quality of rural infrastructure are never substituted for efficient macroeconomic and agriculture-specific policies and the effective implementation of such policies, inadequate infrastructure can be a significant constraint to growth and productivity. Research shows that productivity increase in agriculture, which is an effective driver of economic growth and poverty reduction, depends on good rural infrastructure, well-functioning domestic markets, appropriate institutions, and access to appropriate technology (Andersen and Shimokawa 2007).

The economic, social, and ethical concerns of MinSAAD project in Davao del Sur: MinSAAD is a poverty alleviation project in selected marginalized areas (12 settlements) in Mindanao. The Project addresses poverty issues through competitive and sustainable agriculture using an inclusive approach and modalities in investments that are based on value chain analysis of key agricultural commodities. The Project is therefore focused on sustainable agricultural development and support services such as irrigation, rural roads and bridges, rural water supply, marketing, and related aspects; effective

governance and social protection; and others that would support the objective of alleviating poverty in marginalized target areas.

MinSAAD Project is a cooperation between the Government of the Philippines and the Government of Japan, with the latter extending a loan of PhP3.350 Billion through the Japan International Cooperation Agency (JICA) and the former providing a P1.052 Billion counterparts. The lead implementing agency is the Department of Agrarian Reform (DAR). The Project loan agreement was signed on March 30, 2012, and the Project loan took effect on July 3, 2012. The Project loan closes on July 3, 2020. This Project is aimed to increase agricultural productivity, product value, and income of agrarian reform beneficiaries and other small-scale farmers through the provision of small-scale agricultural infrastructure and agricultural/organization capacity-building support thereby contributing to increasing competitiveness and sustainability of agriculture in the covered areas.

Rural poverty is linked to the exposure of the households to economic vulnerability, through their chronic dependence on agriculture for income generation. A starting point in mitigating this vulnerability is a comprehensive improvement in accessibility. This would substantially reduce transportation cost and thereby lessen the isolation of rural communities from basic welfare services (Barrios, 2008). Community participation is crucial in identifying development projects; it can help to minimize the wastage of resources on inappropriate projects, and enable resources to be allocated instead it to other productive uses. The provision of rural roads, bridges, post-harvest facilities and rural water systems should be bundled properly with support services and capacity-building activities. This can enhance the demand for other infrastructure and services, resulting in a dynamic evolution of essential elements in the pursuit of rural development. Bundles of intervention improve the production efficiency of rural households at the different stages of production, both on and off the farm.

Rural development interventions should pay special attention to the more vulnerable segments of the community, especially, the farmers. Interventions should aim gradually to detach them from complete dependence on agriculture, without putting their food security at risk. Rural infrastructure investments can lead to higher farm and nonfarm productivity, employment and income opportunities, and increased availability of wage goods, thereby reducing poverty by raising mean income and consumption. If higher agricultural and nonagricultural productivity and increased employment directly benefit the poor more than the non-poor, these investments can reduce poverty even faster by improving income distribution as well.

However, targeting government interventions to reduce poverty can only be regarded as

supplementary to fostering economic growth, which is the more durable approach to sustained poverty reduction and overall improvement in living standards. Public investment in physical infrastructure is needed to raise productivity and achieve long-term growth. Such investment is especially critical in rural areas for at least two reasons: first, because ample potential remains for raising rural productivity and employment, thereby contributing significantly to faster overall economic growth in many developing countries; and, second, because rural areas are home to the majority of the poor in our country.

Crop agriculture and animal production, along with managed forests, dominate human-controlled ecosystems on a national and international level. Agriculture has had, and will continue to have, significant negative effects on the environment. There are three main areas of ethics that are raised by these environmental effects. First, the methods used in agricultural production may have hazardous impacts through the release of organic wastes and chemical pollutants, which may harm non-target creatures, leave chemical traces in food, and endanger farm workers and other people. Second, the utilization of genetic resources, water, and soil in agriculture can be wasteful. Third, in addition to the indirect impacts of exposure to chemical poisons, agriculture has a variety of effects on wild creatures and natural ecosystems (CAST 1994).

Transgenic crops, for instance, have unintended environmental effects (UNFAO 2001). Although most individuals would concur that these topics create ethical dilemmas, attempting to define a response raises challenging philosophical issues. Each topic revolves around issues of acceptable risk and standards for comparing the degree and distribution of risks to benefits. There are conflicts between utilitarian and rights-oriented approaches to risk, just as there are with food safety. Additionally, because of their impacts on the rights or welfare of future generations, wasteful behaviors and their effects on natural places may be seen as having ethical significance. On the other hand, some people think that humans have duties of care and respect for nature that go beyond any use of natural resources that humans will ever make. (Taylor 1981). What exactly constitutes a negative environmental impact has resurfaced in discussions about how transgenic crops affect the ecosystem. (UNFAO 2001). Relevant here is also the question of whether transgenic crops might benefit the environment more than conventional varieties.

Concluding remarks

Morality is everyone's responsibility. Another reason for leaving out ethics is a long-held but now mostly debunked belief that morality and value judgments are incompatible with or contrary to the practice of science. This perspective may have caused administrators to overlook creating ethics programs, particularly within agricultural research and

education, as agriculture grew more deeply impacted by science and scientific study. So, it seems sensible to think about how ethics might be institutionalized more successfully than it is now. Everyone involved in the food system should start taking ethics into account when making decisions, taking actions, and supporting policies as this is the most direct way to institutionalize ethics. This kind of thinking has been done, as already said in this work, on occasion; however, in order to institutionalize agricultural ethics, it must become a top priority. Regrettably, other influences like expediency, politics, and economics usually interfere with ethical contemplation. Another element is inertia. It would take a huge paradigm shift in people's lives, habits, and organizations to attempt to incorporate ethical debate and evaluation into routines today.

The public's faith in agricultural – infrastructure science, for example, may call for institutional and individual actions that go above and beyond the steps outlined in this paper. These solutions can involve expanding the public's options for decision-making or improving outreach initiatives to gather opinions from a diverse variety of persons. But in the end, the question of institutionalizing ethics in the agri-infra system comes down to each of us accepting that if ethical issues are to be understood and ethical conflicts are to be resolved, it is our responsibility to understand and contribute within the parameters of our place in the system. After all, the word "ethics" means "way of life."

Investments in the nation's infrastructure may be necessary and relevant as we advanced to the fast trend of technology, but these changes sometimes come with a cost to vulnerable communities and future generations. But with every infrastructure plan comes a host of potential ethical issues that national, state, and local leaders need to consider: gentrification, the potential effects of change in climate, impacts on local culture, and the availability of affordable housing, to name a few.

There are important ethical questions for the nation to consider before diving into such a major and widespread investment in transportation networks, drinking water systems, renewable energy, and other infrastructure projects. Often, there are unintentional consequences that result from improving infrastructure. For instance, we installed rural infrastructures that led to an increase in rents and displaced marginalized communities. Rents went sky-high. Local people were forced to the outskirts of town while often their source of livelihood remained inside the city.

Political and ethical considerations surround technologies. We have to think about the distribution of harms and benefits, along with who gets to have a voice in such decisions. Say, points to cities, where improvements to the highway system have been a significant benefit to residents in the suburbs, but have left people who live in the city's core to deal with increased pollution and adverse health effects

such as asthma. Of course, such issues are not unique to rural areas.

Civil engineers and development workers should consider the ethical impacts of new transportation systems, road and bridge constructions, and other infrastructure like environmental concerns and noise. There are public hearings and other ways for the local public to be involved in the planning process. It's just very important to involve stakeholders in the process of re-routing, updating, or building new infrastructure that affects the public. We need to make sure that people's voices are heard and part of the decision-making process to find common ground. In some cases, the perception of division or the creation of a barrier may not always be the residents' viewpoint.

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Environmental issues and technological challenges caused by COVID-19

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Abstract

COVID-19 has made some changes that influence every element of human living from physical and mental to environmental disruption. This health crisis created discussions on the need to address environmental issues and technological challenges. This paper will draw upon Martin Heidegger's *Question concerning technology* and show that the effects of environmental issues on human lives are impossible to ignore; thus, there is a need to foster a new thinking. I will begin first by showing how technological thinking presents environmental problems and increases the risks where human beings and nature are reduced to a 'standing reserve'. Second, I will present that the environmental crisis has been the result of the predominance of technological understanding of the world and humanity's persistent sway of challenging nature, thus, reducing the world into a manageable resource. I will reflect and use a Heideggerian concept of meditative thinking which promotes not only environmental sustainability but also encourages a strong person-environmental connection. The impact of the current crisis generated by the Covid-19 pandemic allows for the opportunity of transforming change in the attitude of individuals and discloses a way leading to a re-awakening of one's care for things and nature as a whole.

Introduction

COVID-19 pandemic has exposed humanity in the most susceptible situation. The contemporary human beings stand facing against the most dreadful infectious disease in this modern decade. This fatal viral disease has infected millions of people and claimed many deaths worldwide. The main culprit pathogen belongs to the Coronavirus family. Symptoms include pneumonia, fever, malaise, and muscular aches. Corona virus outbreak started in December 2019 in Wuhan, China (WHO 2020) and it was declared a pandemic in March 2020 (WHO 2020). Globally, as of March 10, 2023, there have been 676,609,955 confirmed cases of COVID-19, including 6,881,955 deaths reported to WHO.

In 2019, environmental disasters swayed the issue of climate change into the public arena, viz-à-

viz the effects of modernity in encouraging humans to challenge, exploit and manipulate nature. In early 2020, the advent of COVID-19 in public discourse also occupied our attention through a series of critical discussions about the interrelatedness between environmental and global health crises. Heidegger's insights could highlight the contemporary locus of environmental crisis through his critique of the materialistic approach of science and technology. Today's scientific approach is purely calculative, where everything is challenged forth into quantification. The post-global pandemic concerns like the environmental crisis should consider if technology's place in the new normal should be controlled.

Two major observations are of particular significance in this world brought about by the many devastating aftermaths of the COVID-19 pandemic. First, COVID-19 provided a chance for the environment to recover and regain her freshness temporarily primarily because of lockdowns of business establishments, factories, workplaces, and restrictions of quarantine protocols on many economic activities. Moreover, this pandemic reduced violence against nature and safeguarded nature from the patriarchal exploitation. Consequently, nature was temporarily saved from her perilous condition. Heidegger's warnings are about the danger of thoughtlessly granting the *Gestell*. For Heidegger (1977a, 21), *Gestell* is "the way in which the real reveals itself as standing-reserve." In today's age, *Gestell*, or enframing develops as the dominant mode of revealing. Enframing urges humans into a technical attitude, which endangers and hinders the revelation of things and other ways of viewing the world. Marcuse (1964) contends that this technological rationality has compelled a one-dimensional society wherein there is only one system of rationality that displaces all other human values and ideas. Marcuse (1941, 420) thinks:

Since reality, identity, and freedom lose their natural potency, Marcuse spoke of one-dimensional reality, behaviour, or thinking. The fear or challenge is that "Everything cooperates to turn human instincts, desires and thoughts into channels that feed the apparatus... The relationships among men are increasingly mediated by the machine process."

The overlapping environmental-technological crises and the COVID-19 pandemic have concurrently heightened discussions since 2020. While environmental issues amplify and generate new forms of concerns, all of which are interconnected with the technological challenges, the onset of the COVID-19 pandemic has generated new challenges and demonstrated global changes.

My main claim in this article is that meditative thinking is a successful attempt in transforming our attitude toward technological apparatuses. Thus, to think differently, i.e. meditatively, is an antidote towards technological reform which prevents technological devices to get a hold of our lives so as

not to exploit and manipulate our lives and nature in general. The COVID-19 pandemic shows a promising attitude toward understanding and caring for the environment in linkage to the present age of thoughtlessness. Heidegger (1996b, 45) asserts: "A growing thoughtlessness has taken place and it needs to be addressed." This thoughtlessness establishes from the reality that man as Heidegger (1996b, 45) mentions is "in flight from thinking" in today's technological age. The good thing about lockdowns can thus be identified with Heidegger's term to *think* about our values centered on the restoration of nature and his definition of technology in humanity's present period which frames everything into technological structures. Our experience of today's world become inauthentic since we were forced to engage with others through technology, we treat others without care, we see others as disposable, and on call for technological purposes. Immersion in technology limits our way of thinking as it reveals the world exclusively as a stockpile of resources.

Contemporary human life: Calculative thinking:

Contemporary human life is unthinkable in the absence of technology because our relationship with nature and the way we share in the world is bounded by technology. Modern technology has deeply changed human action as it discloses the world in a challenging way. Part of its goal is an unceasing quest for competency and production while exploiting beings and nature in general. Heidegger's writings on modernity center explicitly on the problem of technology. The term technology is a central issue in many of Heidegger's works, his essay *The Question Concerning Technology* (1977b) is devoted to it.

In *The Question Concerning Technology* (1977b), Heidegger affirms that human beings partake in how technology reveals the world, but he condemns the interpretation of nature as a mere means for human consumption. Heidegger posits that technology is far beyond machines, and he defines and identifies *enframing* as the essence of technology. This technological thinking (calculative thinking) nowadays has become the only form of thinking. Following Heidegger's notion of *enframing*, which means everything in nature is treated as 'standing reserve', the truth is set aside favoring the calculative will, and intelligibility is lost. It is on this basis, that Heidegger's critique and views about modern technology are challenged. He further suggests that modern technology is the kind of revealing that governs modern technology in a challenging way since it threatens and presents dangers to future generations. The idea of care is neglected. Thus, this paper endorses the possibility of release from the reigns of *enframing*, with a return to original thinking through meditative thinking. The kind of thinking that contemplates and questions the problems generated by technology. Meditative thinking rescues human beings who have been fundamentally transformed by modern technology. This could be an effective tool against the calculative

thinking of the technological structures responsible for environmental destruction.

Calculative thinking enslaved both humans and nature. Today, humanity is captivated by *enframing*. We have witnessed the consequences of the rapid occurrence of production through the rise of factories and industries that were tangled with technological progress. Humans are in a dangerous situation in which they are absorbed into technology and are inclined to disturb the environment. Humans became what Heidegger calls a standing reserve. Everything becomes a resource to be used. According to (Heidegger, 1993, 325) "*enframing is the manner in which being manifests itself in the age of technology.*" *Enframing* allows human beings to see the world only as a standing reserve. Heidegger (1993, 322) notes that "*it limits one's way of thinking in order to make reality calculable and manipulate the world, a standing reserve.*" Modern technology controls and directs how a person thinks, decides, and operates, it governs and manipulates everything. Many would agree that it is morally wrong for human beings to destroy the environment, primarily because a sustainable environment is essential to our well-being, and thus, the natural environment ought to be cared for, respected, and protected.

The crisis caused by the COVID-19 pandemic and its disastrous results has changed how we live. Despite experiencing fear, anxiety, and despair, a worldview grew with a magnified sense of communal compassion among humans and re-awakened our connection with nature. I claim that the calculative (technological) thinking and mechanical model of modern technology must change and I propose meditative thinking as an antidote. In Heidegger's later philosophy, he presented his key concept, *Gelassenheit*, often interpreted as *releasement* (Heidegger 2010, xi). Heidegger's *Gelassenheit* embraces the idea of caring for nature. The survivors of the pandemic must learn to think outside of the purposes of scientific and technological use as we now live with an infected world, and learn how to dwell, i.e., to heal, save the world and revive it.

Meditative thinking as an antidote: Heidegger critiques the dangers and saving power of technology and posits meditative thinking as an alternative to technological culture. Technology pushes humanity towards relentless demand which challenges the rest of nature. Heidegger (1977b, 16-17) asserts that "*everything is taken as standing reserve*" to be manipulated and that ultimately causes much harm regardless of its benefits. Everything around is treated as a resource and may be called for further ordering, readily available to be objectified or manipulated. It is important to note that Heidegger himself is not anti-technology, he is not ignoring the benefits of modern technology for he does not dispute technology. Heidegger (1977a, 28), firmly believes that "*technology is not the danger and that there is no demonry in technology.*" He urges us to question the thoughtlessness of humanity amid

the danger caused by modern technology. In Heidegger's *Discourse on Thinking* (1966a, 6), he observes that the "*most thought-provoking in our thought-provoking time is that we are still not thinking.*" We are currently in an age of thoughtlessness, obviously referring to today's technological age. If we persist to be indifferent and consumed by technology, then its essence with all its interrelated dangers shall remain obscured to us. Everything in this world is controlled to stand by and to be readily available on hand. To stand there as a mere resource. Heidegger (1993, 322) calls this a "*standing reserve.*"

A result of technological mismanagement from human activities is environmental issues, some of which are related to health, socio-economic, and natural changes. Climate change, pollution and destruction of natural resources are technologically influenced. On one hand, technology is significant to accomplish our needs, to better our lives, and achieve success and an apparent reason of human convenience, on the other hand, uncontrolled technology destructively governs the environment. Technology has improved our way of living; however, it goes with a great cause. Humanity in general has fallen prey to technological culture. Heidegger offers humankind an antidote for this: think meditatively.

Meditative thinking is our tool against quantification and objectification of the world. It re-awakens our capacity for fundamental questioning. This serves as an antidote suitable to the danger of calculative thinking for it transforms our attitude toward technical apparatuses. Heidegger (1966b, 54) calls this attitude "*releasement toward things.*" This releasement leads us to be open to the mystery of things. Heidegger (1966b, 56) argues that through "*courageous thinking*" releasement toward things and openness to the mystery may flourish. They provide a new perspective from which to approach our appropriate interrelation with the rest of nature towards technological reform. Meditative thinking should replace calculative thinking to free the relationship with the things in the world. Heidegger's passionate call on letting beings be was first mentioned in *Being and Time's* (Heidegger 2008) maxim of phenomenology: "*To the things themselves!*" To be free and dwell with a proper relation to other human beings, to the technological world, and the rest of nature. Heidegger calls us on the dangers involved in the technological views which display the power of modern technology as it reduces the meaning of everything into mere function. He fears that the time will come when calculative thinking becomes dominant as the only way of thinking and establishes itself as a permanent form of life.

COVID-19 pandemic: The danger and saving power: During the lockdown, we lost our individuality in our everyday activities and were reduced to mere tools used to fulfill the ends of the "crowd". The experiences brought by the COVID-19 pandemic give an avenue for technology to

strengthen our fallenness through its *enframing* power. These periods led humanity to experience an inauthentic mode of existence. On a positive note, the COVID-19 pandemic provided an opportunity to think about our authentic existence, away from the illusions of the crowd. In *The Question Concerning Technology* (1977b), Heidegger describes how modern technology defines the contemporary period of humanity and “enframes” everything through the technological structures. Through this technological dominance, humanity was trapped in the technological culture which allows thoughtlessness. Chellis Glendinning (1990) and Kirkpatrick Sale (1995) claimed today’s technological advancement harmed humanity. They both worked on the meaning of technological change, focusing on “how tools and their affordances change and alter the fabric of everyday life” (Watson 2016, 20). Throughout the lockdown, humanity sway to the delusions and the deception of *enframing*, others become hasty, disposable, easily ordered and waiting to be used. There was a shift away from our world and ourselves. Human beings suffer from disenchantment, our meaningful relation with the world was lost and we were separated from our daily routines.

Undeniably, calculative thinking has directed us to achieve and reach our goals in this contemporary world, but it fails to consider the essential meaning of things. Heidegger (1966b, 46) argues that calculative thinking “never collects itself” because it is constantly rushing and quickly moving. Heidegger (1996b, 45) asserts a “growing thoughtlessness” which needs to be addressed even with all the positive results, as well as the effectiveness and production of this kind of thinking. This thoughtlessness establishes itself and transforms the contemporary man, which according to Heidegger (1996b, 45) is “in flight from thinking.” To fully understand our present situation, we need meditative involvement with the world which engages us to think further, to be cautious, to focus on the reality of our existence and, to refrain from calculative thinking which manipulates us toward the rule of machination, as Heidegger (1996b, 47) says:

Because man is a thinking, that is, a meditating being. Thus, meditative thinking needs by no means be “high-flown.” It is enough if we dwell on what lies close and meditate on what is closest; upon that which concerns us all, each one of us, here and now; here, on this patch of home ground; now, in the present hour of history.

Philosophical thinking in the light of the pandemic is transformative, we can examine which kind of thinking holds up, and which requires change and allow them to flourish in this post-pandemic period. This allows us to shift away from being the masters of nature. We can become the shepherds of nature who care and protect. Being mindful in our dealings with both environmental and technological use helps

to shape a post-COVID-19 future. Our concern with the world leads us to a more truthful understanding of ourselves before science alters it. Humanity’s exploitation of the environment narrates how technological thinking leads to the unstoppable manipulation of resources for our pleasure, where we all become strangers not only to others but also to ourselves. Heidegger regards the significance of technology, what he is against is the manipulation of nature. He calls us to be aware that we are only caretakers of nature and not masters. It is safe to say that his ethics is a form of virtue ethics because it focuses on certain attitudes and characteristics essential to achieving a good life. The COVID-19 pandemic reminds us to care and save the world. It promotes a meaningful encounter toward a kind of thinking that cares for nature.

Conclusion

The COVID-19 pandemic exposes us to many environmental concerns such as the devastation of nature alongside the alteration of human existence. This article attempts to reveal that the COVID-19 pandemic travels from one aspect of human life to another. Environmental and technological concerns can permit us to experience two different but related domains of the human world. The coming of the pandemic into the human sphere can be identified as part of the disruptive human intervention in the natural environment. This is, in fact, the implication of our negligence in taking care of nature as we become masters of it, we became *enframed* by technological structures and the calculative use of technological apparatuses.

COVID-19 itself reveals the changes of global disruption on environment and health, it highlights the dangers of the technological operation to both human and non-human worlds. Environmental resources are consumed as mere means (standing reserves) by calculative thinking designed for economic advantage and usefulness to fulfill the ends for humanity’s gain. Environmental destruction and technological dominance challenge human life. Saving us from the dangers of pandemics means rescuing us from the abyss of the *enframing*. Preventing the destruction of nature and avoiding the dangers of future pandemics requires a different kind of thinking. We need to go back to a life of thinking – meditative thinking which promotes the value of care in restoring nature and as an essential component to technological challenges.

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Disaster bioethics: Towards a holistic approach, adaptive, resilient, and responsive framework

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Abstract

Disasters can expose injustice and be a stimulus for reform. They can trigger deeper philosophical and societal reflection that has a positive impact. However, little conceptual unity exists across legal documents, policy guidelines, and disaster scholarship. This study revisits the dominant approaches of how disasters are conceptualized

from the perspective of fundamental normative approaches in moral and political philosophy. Ethical justification for actions taken in the face of catastrophe needs recourse to normative traditions. It thereby contributes to enhancing awareness and recognition of the real-world importance of basic concepts and disaster criteria from the normative perspectives of virtue ethics, consequentialism, deontology, capability approach, vulnerability, human rights, and communitarianism.

Introduction

Disaster bioethics is a field of recent interest that falls within the broader area of applied ethics. While ethical dilemmas have existed throughout human humanitarian relief history, they have rarely been examined in detail (Magone et al., 2011). Such difficulties create challenges for those seeking to address ethical issues in disasters. One of the reasons for this is the way resources and people are overwhelmed in catastrophe. Another is that contemporary bioethics addresses issues raised within public health ethics, itself a fledgling field of bioethics (Lee et al., 2012).

Disasters are typically viewed as overwhelmingly adverse events. However, a more thorough analysis reveals that they do sometimes exclusively bring negative consequences. Disasters can provide an impetus for change that brings positive outcomes, such as changes in building practices or regulations when previous ones are shown to be inadequate. Disasters can expose injustice and be a stimulus for reform. They can trigger deeper philosophical and societal reflection that has a positive impact (O'Mathuna, 2020).

Furthermore, disasters involve complex issues of global inequalities and our responsibilities towards our fellow humans. They also raise challenging ethical issues. Decisions made at high levels by governments and on the ground by individuals have ethical components. Even the decision to classify an event as a natural disaster has ethical implications. In any case, disasters are very complex and unpredictable situations with far-reaching consequences which affect a vast population.

Disastrous events have occurred in developing nations, but developing countries are more vulnerable and experience such incidents more intensely (Rahman & Shaw, 2015). Historically, many cities were severely affected by human-induced or natural extreme events and incurred numerous economic losses, disruption of the urban systems, and human casualties. In the pre-disaster phase, city governments were unprepared, so these communities suffered great devastation. Due to the lack of such effective disaster emergency preparedness, many city budgets were consumed with emergency response, rehabilitation, early recovery, and reconstruction duties after disaster strikes.

Importantly, disasters create unique medical preparedness and response needs. They also require

ethical thought and preparation concerning resource allocation, public health concerns, limits on individual autonomy, and danger to providers. The contribution of ethics to disaster risk reduction lies within the analysis and management of causal factors of disasters. Many decisions concerning these factors involve ethical components, such as how to use resources reasonably, care for people properly, take due account of vulnerability, and act with wisdom amid complexity and uncertainty.

Ethical justification for actions taken in the face of disasters needs recourse to normative traditions. To address these vital issues and analyze their complexity, this study introduced conceptual research in disaster bioethics and aimed to stimulate further work. The researcher explores the dominant approaches to conceptualizing disasters in academic disciplines, especially philosophy. It enhances awareness and recognition of the real-world importance of basic concepts and disaster criteria from the normative perspectives of Virtue Ethics, Consequentialism, Deontology, Capability Approach, Human Rights, and Communitarianism.

Disaster bioethics principle: There is an increasingly conceptual, ethical, and pragmatic intersection between the concerns of traditional public health ethics and the emerging academic discourse on disaster bioethics. This intersection has not received any scholarly attention in the bioethics literature. This chapter attempts to give an overview of the knowledge in disaster bioethics literature and how disasters have been conceived in philosophy. I attempted to summarize and discuss some works where philosophers have explicitly defined disasters and tracked down the ethical account. This enabled us to consider the disaster theoretically and guide us to intervene on the field when the actual disaster occurred. Several different ethical approaches in dealing with disasters have been propounded by philosophers, notably three dominant normative schools: virtue ethics, utilitarianism, and Kant's deontology. I also added to the list the same approaches to political philosophy, such as the capability approach, vulnerability and human rights, and communitarianism.

However, even though these three ethical theories seem to be the "ideal" theories for dealing with the problematic situations arising from disasters, it is argued that they are not ideal at all, as they overlook and do not take into account the particular features of the problematic situations and the feelings of both, the victims and the workers. Moreover, after careful examination, it turns out that Kant's deontological account is not just the formal distanced ethical theory that first appears to be. It also possesses an empirical account, the ethical account of virtues, which can be directly applied to the problems caused by disasters in the real world. Especially by presenting us with a detailed analysis of the duty of justice and the duty of beneficence, Kant succeeds in bringing out the practical relevance

that his theory of virtues has for disasters. Thus, it must be examined to tease the epistemic gap (s).

The current state of knowledge of disaster bioethics: How have philosophers defined and conceptualized disasters? The short answer is surprisingly little. They have hardly defined it explicitly and provided implicit definitions, pretty much like everyone else who has attempted it; that is, they have defined it in ways that suit their purposes. That is the short answer; of course, it is too short (Sandin, 2009).

Approaching the conceptualization of disasters in philosophy requires an idea of what philosophy is. Philosophy, in this sense, is about searching for answers to the questions borrowing from Kantian epistemic inquiry – 'What is there? What can we know? What ought we to do?' The focus of the research on this matter will be on analytic tradition. The researcher summarizes and discusses some works where philosophers have discussed philosophical issues about disasters and disaster-like situations without much discussion of the definition of the term. Those have mainly been ethicists, normative, applied, and political philosophers.

Under the stress of the global problems that plague humanity, philosophers have been dealing systematically with these issues for the last 20-30 years. As O'Mathuna points out, there are, on the one hand, the philosophers who claim that a form of utilitarianism is the appropriate theory for dealing with the problems of public health, famine relief, and disasters; there are, on the other hand, the scholars who contented those deontological accounts like, for instance, Kant's deontological theory, are the ideal types for considering these dilemmas (O'Mathuna, 2016).

Defining disasters: To begin with, there is at least one non-philosopher whose efforts must be mentioned: E.L. Quarantelli. There are at least two reasons for this. First, Quarantelli has an analytic philosophical approach to the definitional issue. His work is an outstanding example of Carnap's idea of explication, 'the transformation of an inexact, prescientific concept, the explicandum, into a new exact concept, the explicite (Carnap, 1950). Second, philosophers discussing disasters refer to Quarantelli (Voice, 2016; Zack 2009). In his introduction to the seminal volume, what is a Disaster? Quarantelli recounts how he asked several scholars to 'put together a statement on how they thought the term "disaster" should be conceptualized for social science research purposes' (Quarantelli, 1998). The emphasis is on the original, and it is important. Quarantelli continues by saying that while '[a] minimum rough consensus on the central referent of the term "disaster" is necessary,' he emphasizes that at the same time 'for legal, operational, and different organizational purposes, there is a need for and

there will always continue to be different definitions/conceptions' (Quarantelli, 1998). However, he also argues that 'for research purposes aimed at developing a theoretical superstructure for the field, we need greater clarity and relative consensus' (Quarantelli 1998, emphasis in original).

Despite the surprising scantiness of academic philosophical discussions, disaster—or the potential of disaster—has been a looming presence in Western philosophy since its early days. For instance, in the *Timaeus* and *Critias*, Plato recounts the myth of Atlantis where disaster befalls the once-mighty kingdom: *"But at a later time, there occurred portentous earthquakes and floods, and one grievous day and night befell them, when the earth swallowed up the whole body of your warriors, and the island of Atlantis in like manner was swallowed up by the sea and vanished; wherefore also the ocean at that spot has now become impassable and unsearchable, being blocked up by the shoal mud which the island created as it settled down."* (Plato 1925, 25c–25d)

Similar eschatological myths have prevailed over the millennia in Christianity and other religious traditions. A pivotal point in this development, and one which perhaps marks the beginnings of modern philosophical engagement with disasters, is the Lisbon earthquake of 1755. It struck on November 1st when many of the city's inhabitants attended mass. The city center, where the nobility dwelled, was particularly badly damaged (Dynes, 2000).

The Lisbon earthquake figures in the interchange between Rousseau and Voltaire (Cassidy, 2005). Philosophically, the disaster prompted Voltaire's questioning of the optimistic worldview of Leibniz, the Pope, and others (Dynes, 2000), a view Voltaire subsequently ridiculed in *Candide*. Rousseau replied, and the discussion concerned Providence and God's place (if any) in a world containing evil or apparent evil. The theodicy is still discussed in the context of disasters, e.g., volcanic eruptions (Chester, 2005).

However, for several reasons, Rousseau's reply is also interesting from a more secular point of view. One is that it points to a conceptualization of disasters that recognizes that 'natural' disasters do not strike blindly—the way buildings are located and constructed affects the outcome, as do, to some extent, the actions of the victims (if they postpone evacuation in order to collect their belongings or not, for instance; Cassidy, 2005). The Lisbon earthquake was also the first disaster in a nascent modern nation-state. It was the first disaster in which the state accepted the responsibility for mobilizing the emergency response and for developing and implementing a collective effort for reconstruction' (Dynes, 2000). The Lisbon earthquake, thus, in more than one respect, can be said to have been the first modern disaster.

Disaster conceptualizations in philosophy: In a recent paper, Paul Voice (2016) describes areas where philosophers might be concerned with disasters. First, there is a set of metaphysical and, in

some cases, theological issues. This is what concerned Rousseau and Voltaire in the wake of the Lisbon earthquake, and it would be expected that here is where you could find statements at least purporting to be the true answer to Quarantelli's question, 'what is a disaster?' Second, there is the ethical approach, which is concerned mainly with individuals and their actions. Here belong also applied ethical issues such as the responsibilities of healthcare workers in disaster situations, triage questions, and so on. Third, there is the political-philosophical perspective, which is concerned primarily with institutions rather than individuals, with questions such as what coercive measures the state is justified in taking in a post-disaster situation. In this category, we can find the heritage from Hobbes and materials from discussions about just wars and warlike situations (Sandin, 2009). However helpful, it appears that at least one field of philosophy that could and arguably should be concerned with disasters is missing from Voice's categorization: epistemology and its close relative, the philosophy of science. Discussing some of the issues treated in Quarantelli's (1998) volume would likely benefit from such approaches, and indeed some of the authors in that volume touch upon them, for instance, Dombrowsky (1998). Oliver-Smith (1998) uses another standard item from the toolbox of analytical philosophy, W.B. Gallie's notion of essentially contested concepts.

Voice discusses some definitions of disasters. He notes that they typically emphasize harm and the breakdown of life in a community. Since these criteria are not unique to disasters, the amount of harm sets disasters aside from non-disastrous events involving harm. '[A] high degree of the harm often (but not always) in a spatially confined place and a brief period combine as rules of thumb for identifying a disastrous event' (Voice, 2016). He points out that such a 'definition' hinges on others and that there are demarcation problems, such as how much harm is required for the disaster label to be applied, and so on. Voice argues that '[m]ore academic definitions of disasters are mostly constructed from a sociological perspective' (Voice, 2016), referring to the Quarantelli tradition.

Voice (2016) defines a disaster as 'an event that destroys or disables the institutions required for moral agency and effective citizenship'. He argues that a disaster is more than aggregated individual harm and that no one needs to be physically harmed for a disaster to occur, nor does any property have to be damaged, 'although nearly all disasters are violent events of some kind' (Voice, 2016). It is difficult to envisage such a non-violent disaster, and Voice does not provide examples. Perhaps a breakdown of communication systems might fit such a definition. However, it would be more natural to say that such a situation is a crisis, which might result in a disaster (if harm occurs). Voice, however, emphasizes that disasters in this sense need not be sudden but that 'the slow erosion of dignity and

citizenship in a case like Zimbabwe is a disaster' too (Voice, 2016). Voice's position implies that states owe disaster victims not only emergency relief but also longer-term rebuilding, for instance, providing schools and other things required to restore citizen capacities. However, the state does not owe the victims to restore the level of well-being that they had before disaster struck.

In summary, philosophers—at least analytic—who have thought about disasters have typically been political philosophers dealing with the Hobbesian tradition's problems of state authority and exceptions or ethicists. Some of those ethicists have been applied ethicists who have pondered the actions, duties, and responsibilities of individuals in emergencies, of which disasters constitute a subset, along with wars and other situations. Many of them have been working in medical ethics and discussed issues about the actions of medical professionals such as nurses and physicians in disasters and disaster-like situations. Others have been normative ethicists who have reasoned around the implications of disasters for a specific normative position. Sometimes the relationship between normative theory and applied disaster ethics is unclear (Mallia, 2015). If one wants to ponder what philosophers have contributed to the discussion of disasters, the term 'disaster' itself might not be the most important focal point. Other related terms may be as relevant as 'crisis,' calamity,' and 'catastrophe.' The terminology might be confusing. For instance, writing about global catastrophic risks, including what they call 'existential' risks, Bostrom and Ćirković (2008) do not appear to distinguish between catastrophes and disasters. Perhaps most importantly, the discussions involving 'emergency' may be potentially relevant for disaster philosophizing (Sorell, 2013; Walzer 2000, 2004).

Consequentialism: Consequentialism argues that the morality of an action is contingent upon the action's outcome or consequence. Hence, morally right action produces a good outcome or consequence. The more people are affected by such an outcome, the better it is (Harris, 2011).

Consequentialist ethics is essential in the context of disasters. The reason is that disasters frequently affect large numbers of people. Accordingly, the focus is often not on the individual but on the consequences for more significant numbers of people. Hence, consequentialism is an approach to ethics that appears to fit the context of minimization of deaths and suffering in disaster settings.

Nevertheless, how did consequentialism become a theory, and how has it tried to address disasters? Utilitarianism is an appropriate moral theory irrespective of the fact whether the context is regional (earthquakes, tsunamis, hurricanes) or global (ultimate harm disasters included) – as long as it deals with many people rather than a single individual. Similar to other types of consequentialism, utilitarianism might be entirely appropriate in disaster settings while being much

less adequate moral theory in normal, non-disaster, and non-emergency settings.

In disaster settings in which decisions have to be made that are based on triage aimed at saving the most significant possible number of lives with insufficient resources, the number of lives saved trumps respect for cultural conventions. The reason is that saving lives is a universal moral value. It is morally more significant than a culturally determined convention relevant only in a specific context with relative rather than universal values (Rakic, 2014).

One among many examples is the following. Disaster responders have saved lots of people's lives by performing amputations. Although the amputees have been ostracized in some cultures they originated from, ending up starving, this has not resulted in disaster responders ceasing to perform amputations. The reason is that, in some instances, amputations can save lives.

A dogmatic sacralization of cultural specificity is immoral if we discriminate between people based on social status or other traits and infer that some lives ought to be preferred to others' lives. The extent to which cultural values are to be respected is a matter of degree. That is why their value is relative rather than universal. They are conventions.

Specific moral values, on the other hand, are more than conventions. Treating human lives equally is one such value. Still, even here, there can be exceptions. In disaster settings, the value of equal treatment of human lives can sometimes be relativized. It might be morally justified to "let go" of life to save more lives. In cases where decisions are made about multiple lives, while medical resources are insufficiently available, disaster respondents might have a moral duty not to treat a patient who is unlikely to survive – to save more lives.

All in all, in different situational settings, different moralities are preferred. Settings in which consequentialist ethics are preferred are those in which decisions about multiple lives must be made. Disasters generally belong to them. It can therefore be concluded that disaster settings appear to require disaster consequentialism.

Deontology: Deontological accounts emphasize duties. According to Kantian deontology, our fundamental duty is to respect the other person and to treat him not merely as a means but at the same time as an end. On this account, we do not only have duties to ourselves but also to other people. In a situation of need and destitution, we would not want to remain helpless and deserted by others. In the same way, we cannot want to leave other people without help when they find themselves in need. The Universal Law of Nature, therefore, prescribes that we help others when they are in difficult circumstances like, for instance, disease, poverty, or disaster, as it also prescribes that other people help us when we find ourselves in circumstances as complex as these (Kant, 1997).

In his ethical writings, Kant often claims we have a moral obligation to help those in need and in poor conditions. In *The Groundwork*, when he tests the Formula of the Universal Law of Nature against particular examples, Kant mentions the case of the man who, even though he is in a position to help and support those in need, prefers to live in comfortable conditions and indulge in pleasures (Kant, 1997). Kant recognizes that there is nothing wrong if one behaves this way as long as one also abstains from harming those in need. However, this person cannot will that his maxim becomes a Universal Law of Nature because, in that case, the Universal Law would involve a contradiction of the will. He may find himself in situations of need and despair, and “by such a law of nature arisen from his own will, he would rob himself of all hope of the assistance he wishes for himself” (Kant, 1997).

He also speaks about the duty of beneficence to other people in several parts of *The Metaphysics of Morals* (Kant, 1996a). In particular, he argues about the duties of love we have to other human beings, which he divides into duties of beneficence, gratitude, and sympathy (Kant, 1996). However, he also speaks about the duty of beneficence in the context of civil society. The wealthy are obligated to the state because, by submitting their will to the protection of the state, they owe their existence and wealth to it (Kant, 1996). The state, therefore, has the right to contribute part of its wealth to its poor fellow citizens. The way to do this will be either by imposing taxes on wealthy citizens' property and income or by establishing funds and supporting social institutions and organizations (Kant, 1996).

Put in this way, and it would seem that the duty of beneficence realized by the state in the context of civil society is a duty of justice. However, beneficence, which makes sense regardless and independently of the commonwealth, is a duty of virtue. Quite understandably, one may wonder whether Kant's virtue ethics approach has to tell us something about famine relief, poverty, and disasters on a global stage.

Certain Kantian scholars believe these two duties constitute the core of Kantian ethics (O'Neill, 1993). The core of Kantian ethics, to remind the reader, is provided by the Formula of the End in itself: “So act that you use humanity, whether in your person or the person of any other, always at the same time as an end, never merely as a means” (Kant, 1997). Nevertheless, the requirements of each duty are entirely different. The duty of justice requires that we guide our behavior on the maxim that we never harm or cause anything wrong to others. On the other hand, the duty of beneficence requires that we act in ways that foster and promote other persons' ends (O'Neill, 1993).

O'Neill, for sure, provides us with a deeper understanding of the Formula of the End in itself when she analyzes it by the duty of justice and the duty of beneficence (O'Neill, 1993). To use a person as a mere means, and not at the same time as an End

in itself, implies that I treat her in a way or in ways to which she has not given her free, informed consent. She has been coerced if she has not consented to my treating her like I do. If, on the other hand, she has consented to it while she was kept in ignorance, then she has been deceived.

Of course, in our everyday dealings with others, we may often use one another as a mere means. I may use, for instance, my students during my lectures and tutorials as a kind of guinea pig to test how they respond to the very controversial philosophical ideas I propound. However, they also use me as a mere means; when they exhaust me mentally to cultivate their intellectual capacities and critical thinking. Nevertheless, I am pretty aware of this and consent to it, as they are also aware of the educational procedure that has been going on and agreed on. As long as both parties have freely consented to enter a deal in the frame of a social and cooperative scheme, no deception or coercion is involved.

There may be cases, however, in which one party may have been deceived into consenting to something to which he would not have consented if he had known. Thus, if someone gives a promise with the intention of not keeping it, he is behaving on a maxim that the person to whom the promise is made cannot have known. Consequently, he agrees to something to which he would not have agreed if he had known the promisor's fundamental maxim. According to Kant's ethical theory, the person who has in this way been driven to consent to something to which he would not have consented if he had known the other party's maxim of behavior has been deceived and coerced; in a word, he has become a victim of injustice (O'Neill, 2016).

However, as already mentioned, in addition to the duty of justice, the Formula of the End in itself also involves the duty of beneficence (O'Neill, 1993). This implies that we do not violate the Formula only when we deceive, coerce or do injustice to a person. We also treat the other as a mere means, and so violate the Formula when we refuse at least some of the times to foster the others' ends like our own, especially when the others are in situations of famine, poverty, and disasters.

Kant's deontological account, particularly his theory of virtues, is the appropriate ethical account for dealing with disasters, famine, and world poverty. I take sides with O'Mathúna in claiming that, contrary to what certain philosophers have supported, utilitarianism and Kant's deontological formal account are far from “ideal” theories when dealing with disasters, as they leave out the particular features of the situation, the feelings and the intentions of those involved, whether victims or healthcare workers. However, as I then point out, Kant's deontological account, apart from its formal part, also includes an empirical part, which renders his ethical theory applicable in the concrete circumstances of the real world. The conclusion reached is that Kant's account of these two duties of

virtue is so carefully worked out that it leaves no doubt that it is the right one for dealing with disasters.

Virtue ethics: Virtue ethics studies the character traits of good persons. This includes analyzing how ordinary people can emulate moral role models to improve their character. The contemporary discourse about virtues and disasters includes the long-standing analysis of the role of reason and emotions in virtues. However, the discourse also considers what virtues are relevant in disaster situations. Two important examples of the latter are the virtues of humanitarian workers and the virtues of those who suffer disasters.

Many philosophers have not been interested primarily in analyzing the moral rightness of individual acts but instead focused on how human life should be led. This involves an analysis of what kind of personal characteristics are essential parts of a good life. Such personal characteristics can be categorized into those traits or qualities that are good, virtues, and harmful vices. Virtue ethics, in general, is the study of these character traits. Compared to consequentialist and deontological ethical theories, virtue ethics refocuses an actor's habits and motivation in general instead of his or her deliberation and acts on a single occasion. Virtue ethical theories often share a teleological character with consequentialism. Virtues are good for something, for living a good, complete, or flourishing human life. Even if there is much disagreement about the specific definitions of all character traits, it seems that a good life, according to a virtue perspective, should include the development of character traits like bravery, industry, benevolence, integrity, and friendship. However, as with deontological theories, virtue ethics does not presume that ethics foremost concerns maximizing the good. Instead, the good life might also include protecting some values against others.

It is natural to start with Aristotle (384–322 BC) because he is perhaps the most famous philosopher who has thought about virtue ethics. His most famous work on ethics, *The Nicomachean Ethics*, provides a rich understanding of what a good life might be and how virtues figure as parts of this life.

Aristotle's thinking about virtues builds upon his philosophical anthropology of the nature of human beings. As a starting point, Aristotle presumes that there are better and worse ways to live a human life. All things have an end, a *telos*. This is true of knives and other tools but is likewise true for human beings. The *telos* is what is the specific character of an entity. For a knife, the characteristic is cutting. A good knife is then characterized as being suitable to cut with. Humans, too, have a characteristic trait, our capacity to reason. A good human life must therefore include reason (Aristotle, 2004). Aristotle's analogy is plagued with strong assumptions that are not easy to accept. The knife is made, but that is not true of human beings.

Aristotle claims that reason, a specific human ability, and our highest faculty govern a good life. This has two dimensions. First, the best life is spent in continuous contemplation since that is the primary activity associated with reason. Contemplation is an activity we can practice by ourselves, which has value (Aristotle, 2004). Second, living under reason includes acting in a way that is appropriate to the situation at hand by using our intellectual capacity for practical reasons (Aristotle, 2004). A virtuous person's characteristic is that he or she has a disposition to act appropriately in different situations. A brave person can avoid acting rashly and cowardly (Aristotle, 2004). A virtuous person who possesses practical reason will also be able to respond appropriately to different situations, including emotional responses where fitting. For example, anger can be justified when a person is treated without due respect.

Another critical thinker in the virtue ethical tradition is David Hume (1711–1776). In Hume's central work, *An Enquiry Concerning the Principles of Morals* (1751), he provides an account of virtues that shares some similar traits with Aristotle, specifically the importance of emotions and the social utility of virtues.

Hume's thinking on virtues is shaped by his general empiricist methodology in which he seeks the explanation of different phenomena, including morality. This means that Hume, too, sees emotions as a significant part of morality, even more fundamental than reason. Morality is not true, false, reasonable, or unreasonable; it is a matter of proper motivation, which emotions can only provide (Hume, 1998). Hume's core idea is that humans are governed mainly by a wish to do good for others (Hume, 1998). In Hume's complex moral psychology, humans are driven by both egoism and sympathy for each other, but the latter holds moral importance. This can be noted by the fact that we can even praise the virtuous character of an enemy (Hume, 1998).

It is noteworthy that Hume also sees a practical function for emotions. Hume claims that a virtue is a character trait that humans find agreeable or helpful (Hume, 1998). A counterargument is that humans might have different emotional responses to different character traits, and thus Hume's argument seems to lead to relativism. Instead of accepting this outcome, Hume argues that humans like and dislike the same moral character traits. This moral sense is common to all normal human beings, even if not all have developed it to the full extent. He also claims that we tend to praise those character traits, which, in the long run, are helpful for society and individuals (Hume, 1998). Thus, Hume and Aristotle agree that virtue is beneficial and that a morally good life is the best way to live. This contrasts them with a shared experience that acting virtuously is often not as successful as deceiving and maximizing one's egoistic benefits.

A reoccurring idea in the history of virtue ethical thinking is that humans are not morally static

creatures but can develop their moral virtues. Aristotle stressed the importance of proper moral teaching (Aristotle, 2004). Hume claimed that the natural virtue of fellow feeling could be strengthened with education (Hume, 1998). MacIntyre also identifies the importance of learning the internal rules of excellence in a tradition (MacIntyre, 1985), and Slote argues for extending our sympathy to others through oral education (Slote, 2007). The idea of moral development has an important implication. We cannot be content with the current state of our moral capacity. We might be brave, just, and humane, but we have not achieved these virtues' final stage. There is always room for improvement. Aristotle, Hume, MacIntyre, and Slote stress that we can improve only by learning from those who have achieved a higher stage of virtue.

Turning to the connection between virtues and disasters, we can note that disasters, in the sense of unforeseen radical events with significant negative impacts on many people, are linked to virtues in two ways. First, what is a morally excellent response to those disasters we might face? Second, what is a morally excellent response to disasters that others face?

A virtuous ethical perspective can identify several promising paths for future research. Resilience is of general importance for a good life since every person would benefit from returning to everyday life after an intense experience. It is also clear that the virtue perspective provides a more stringent moral ideal than traditional professional, ethical codes. Virtues are not about meeting minimum standards but about actively pursuing excellence in moral matters. There is no room for complacency in such an ideal. Ethical standards will therefore need to be understood as pedagogical tools in the pursuit of excellence or to be set so high that they are seldom or ever achieved. The ancient and contemporary thinkers who analyze virtues do not believe that such moral excellence is beyond human ability. However, they acknowledge that morality makes intense demands on us, and a general benefit of virtue ethics is to make this demand explicit.

Vulnerability and human rights: The concept of vulnerability has been introduced in the bioethical debate recently. The vulnerability has been a core notion in philosophy, particularly in Continental schools. In a sense, every human being is vulnerable. In bioethics, the concept has been introduced initially in clinical research to demarcate groups of individuals or populations as 'vulnerable' and therefore entitled to special protections. With the globalization of bioethics, suffering, and risk in the face of medical research, technologies, and care have become global realities, so the concept of vulnerability has emerged as one of the principles of global bioethics, for example, in the UNESCO Declaration on Bioethics and Human Rights.

The principle of vulnerability is especially salient in the context of global disasters. It points the ethical discourse in specific directions focusing more on

ameliorating the conditions that produce vulnerability rather than on emergency actions focused on saving lives. In this connection, the human rights discourse might be helpful to focus attention and actions in connection to disasters. This discourse can complement the dominant ethical framework of humanitarianism in disaster prevention, relief, and recovery. Both ethical discourses are strongly connected with the notion of vulnerability. Human rights language presents the sufferers of disasters as bearers of rights rather than victims. It also focuses on structural violence, economic injustice, and global solidarity.

However, this requires a critical reformulation of human rights discourse since it often adopts a neoliberal approach. It assumes that globalization offers opportunities to strengthen human security and provide basic needs rather than threatening them. In practice, human rights discourse is no longer used to protect the vulnerable but to legitimize the global practices of neoliberalism. It often shares the vision of progress, growth, and development that underlies neoliberal approaches and policies, hardly questioning the negative relationships between social context, trade, and human flourishing. Global bioethics, if taken seriously, can redirect human rights discourse to ways to prevent future disasters.

Vulnerability is used in disciplines ranging from philosophy, theology, and ethics to ecology, computer science, and physiology. There is an enormous diversity of formulations and interpretations. An interesting approach is proposed from a general system perspective focusing on the conceptual components of the notion, regardless of the domains in which it is used and whether it is used for human beings, communities, or countries. Neil Adger, a climate change researcher from the United Kingdom, defines vulnerability as "the state of susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt" (Adger, 2006). This is a functional, not a content definition. It does not clarify the fundamental characteristics of vulnerability but shows how the notion functions and relates to other concepts. This approach is helpful since it urges us to consider the conceptual elements that we need to consider in understanding the notion. Vulnerability is a function of exposure, sensitivity, and adaptive capacity.

The first component is exposure. There must be external stresses or perturbations that produce potentially harmful threats. These threats are hard to avoid for human beings since they are continuously exposed to each other and the social and natural environment.

The second component is sensitivity. This is susceptibility to harm or damage. Generally, it is "the degree to which the system is modified or affected by an internal or external disturbance or set of disturbances" (Gallop, 2006). From a medical perspective, sensitivity is inherent in the body,

organs, tissues, and cells: they can be affected, for example, by lack of oxygen. From a general perspective focusing on the human person, sensitivity is inherent in the human predicament, existing before exposure.

The third component is the ability to adapt or the capacity to respond. Sometimes a distinction is made between coping ability and adaptive capacity. The first is the short-term capacity to overcome external stresses; the second is the longer-term adjustments. Humans can cope, adapt and adjust, resisting and overcoming threats.

Vulnerability is a core notion in the international human rights language. Bryan Turner (2006) has developed the theory that the foundation of human rights is our shared vulnerability. Human beings are embodied agents. Because of their biological vulnerability, humans feel pain and can suffer. They also depend on others to grow and mature, become autonomous individuals, and be cared for in illness and aging. They are socially connected because they need social support and legal protection. Vulnerability demands that humans build social and political institutions to provide collective security. Human rights have emerged because human beings can recognize pain and suffering in others. Michael Ignatieff defends human rights with the argument of moral reciprocity. Human actions are justified or not because we can imagine the pain and degradation done to other human beings as if it were our own (Ignatieff, 2001). The emergence of human rights language in the second half of the eighteenth century was based on philosophical ideas of individual autonomy and equality. People learned to empathize and think of others as equals (Hunt, 2007).

Humans are moral agents; they have the capacity for moral empathy, conscience, and agency because they live in what Turner calls "an existential context of shared experiences of pain and humiliation" (Turner, 2006). Turner argues that human rights are universal principles because vulnerability is shared and thus constitutes common humanity. Furthermore, it connects them as rights of individual human beings to the social rights of citizens through social institutions and arrangements. However, such arrangements are always imperfect and inadequate, thus precarious. This dimension of precariousness is critical in disasters. Vulnerability means world-openness. Humans are essentially vulnerable beings. They can never be completely protected and made invulnerable.

What are the implications of a broader notion of vulnerability for disaster bioethics? When the vulnerable person is considered a 'failed' autonomous subject, the vulnerability will not only be located in the individual. However, it will also imply a specific practical response, i.e., protection by substituting the lack of capacity through the voice of others. This particular framing is normatively driven: it results from the primacy of the ethical principle of respect for personal autonomy. What is less clear is that significant dimensions of the notion

of vulnerability are left out of consideration. For example, structural, social, economic, and political determinants that disadvantage people are not deemed relevant. The focus on individual weakness preempts a social and political perspective that considers vulnerability as the outcome of specific situations, argues that people are made vulnerable in specific contexts and that the notion is more related to the ethical principles of justice, solidarity, and equality than individual autonomy. The paradox is that the discourse of vulnerability has developed in association with increasing processes of globalization. It gives voice to today's experience that everyday existence is more precarious, that we are exposed to more hazards and threats, and that our capacities to cope have decreased. The fall-out of these processes for individual persons has correctly instigated bioethics to address the problem of how persons can be protected and empowered.

Nevertheless, as long as bioethics does not critically examine the production of vulnerability itself, it does not address the root of the problem. Framing vulnerability as a deficit of autonomy not only presents part of the story but also implies a limited range of options and actions. In this sense, mainstream bioethics' interpretation of vulnerability is ideological: it directs theoretical and practical attention away from the circumstances that make subjects vulnerable.

When disasters strike, human rights are not lost. Citizens have the same rights as before, but exercising them will be more difficult. Often, they need to be prioritized because the circumstances do not make it possible to apply all simultaneously. Governments also have the same duty to protect human rights, but exercising this duty in disastrous conditions may be more complicated. Victims of disasters face various human rights challenges: unequal access to assistance, discrimination in aid provision, unsafe resettlement, property restitution, and displacement. These challenges can occur in different phases of disaster management. Human rights-based approaches should therefore be incorporated in all phases: preparedness, emergency relief, and response, reconstruction, and recovery. They should offer a holistic approach focused on the basic needs of victims.

It is argued that four categories of human rights are at stake in disasters. First is the right to the protection of life. This is the priority of disaster relief directly after the catastrophe has occurred. It is also, as discussed above, the primary concern of humanitarianism. Second, are the rights related to food, health, shelter, and education. These are needs included in the right to health. Third are rights related to long-term economic and social needs (housing, land, property, and livelihood). Fourth are rights related to other civil and political protection needs (documentation, movement, and freedom of expression). While the first two categories of rights are especially relevant during the emergency phase, the two last categories are particularly relevant in

the recovery and reconstruction phases (Brookings-Bern Project on Internal Displacement, 2008).

This framework of rights shows the characteristics of a human rights-based approach. It emphasizes equality. The assistance should be provided based on need. It is a coherent approach since rights are interconnected. The right to housing is linked with the right to health and water. Furthermore, the human rights-based approach is continuous; implementing the right to shelter demands a transition from rudimentary shelter into longer-term reconstruction or development (Carver, 2011). However, in overwhelming situations, rights cannot be applied to everyone, and not every right can be applied. This means that priorities must be selected and that triage is necessary, not merely at the level of individual victims but also at the meso- and macro-levels (ten Have, 2014). Furthermore, interpretation is needed to determine what a specific human right means in local conditions. Displacement is a common and significant problem with disasters. The right to a shelter means people can live somewhere in security and dignity. However, what is the content of this right in very different countries, and who are the rights-holders? Human rights discourse does not specify what kind of shelter needs to be provided.

The human rights framework is mainly advocated for prevention and preparedness. One reason is that disasters will have a disproportional effect on people and populations that are vulnerable. Marginalized populations will suffer the most. Pre-existing human rights violations, poverty, and government corruption will also impact the outcomes of disaster response efforts. Mechanisms of injustice that exist before disastrous events happen will continue to manifest themselves during disaster response and recovery (Hurst, 2010). Chile is an excellent example of how a human rights-based health system can guide disaster response to protect vulnerable populations such as children. Because of pre-existing programs, children and families could be quickly and efficiently supported after the earthquake of 2010 (Arbour et al., 2011)

Disasters are associated with ethical questions. The dominant framework dealing with these questions is humanitarianism, appealing to values such as saving human life, solidarity, and compassion. This chapter argues that this ethical framework should complement the human rights framework. Disasters, humanitarianism, and human rights are interconnected by vulnerability. Vulnerability reflects the precariousness of the human condition and the fragility of the human species. It also reflects radical changes in contemporary human existence due to globalization. Disasters occur because of (increasing) human vulnerability. At the same time, vulnerability is also a source of human rights. Because every human is vulnerable and there is a constant possibility of harm, human beings need each other and must cooperate. They need institutions such as human

rights to survive and flourish. Vulnerability, therefore, is not just an individual attribute. Mainstream bioethics construes vulnerability as deficient autonomy. It does not consider that autonomy demands appropriate conditions to arise, develop, and be exercised. Vulnerability, therefore, is misconstrued as an individual attribute; instead, it directs attention toward the underlying conditions for human flourishing. Vulnerability is not merely inability or deficiency but also ability and opportunity. Vulnerable subjects are not victims needing protection or dependent on benevolence or the strong. Human capabilities will develop when inequality and structural violence have been removed, and the appropriate social, cultural, political, and economic conditions for human flourishing have been created. Ethics itself has emerged through reflection on the experiences of vulnerability. Human rights-based approaches articulate a perspective that is stronger than humanitarianism.

Capability approach: Although Sen had already begun work on the capability approach to justice in 1979 (Sen, 1979), the term 'capability' does not appear in *Poverty and Famines* (1981). For Sen (1999), poverty is conceived as capability deprivation. Development can be seen as increasing the fundamental freedoms (capabilities) people have to live the lives they value and have reason to value. Within the development field, this view contrasts with the view of development seen as an increase in income, which is the approach that had been endorsed by the IMF and World Bank for many years (however, the institutions' approach has now, to some extent, changed partly as a result of Sen's work). The capability approach to development also distinguishes itself from those concentrating on resources, such as make the industrialization or modernization approaches or some versions of the basic needs approach. In the present context, it is essential to make clear that while Sen's work on famines is explanatory, the capability approach in Sen's version primarily analyzes the evaluative space for well-being. Nonetheless, there are interconnections (Sen, 1989), as discussed below.

It is essential to state that although the capability approach is normative, it does not entail one specific theory of ethics or justice. Sen and Martha Nussbaum, the leading proponents of the approach, hold different views about ethics and justice and have different aims. Nussbaum's principle question is "When is a society just?" In answering this question, she puts forward and defends a list of ten central capabilities that individuals should have, as near as possible, for societies to be just. These capabilities provide a threshold of justice for underwriting constitutional guarantees (Nussbaum, 2001). Although Nussbaum's work is vital and innovative, it does not claim to go beyond fundamental social justice. Regarding disasters, it only tells us that fundamental injustices are done and that the government is responsible for changing

the situation. It does not provide a detailed analysis of the responsibilities involved in disasters.

Sen (2009) rejects Nussbaum's fundamental question, which he sees as neither a good starting point nor an ending point for a theory of justice. It should not be read as meaning that Nussbaum's work is less critical.

Sen has done little work on disasters since the 1980s. Instead, his work has concentrated on issues connected with development and justice (Sen 1999, 2009). His efforts have been institutionalized through the Human Development Index (HDI) and the Human Development Reports supported by the United Nations Development Program. Much of the work within the capabilities approach, more generally, has been on specific aspects of these issues. However, it must be emphasized that Martha Nussbaum's work on justice cannot be considered a footnote to Sen (see especially Nussbaum 2001, 2006).

This brief discussion does not exhaust the issues involved, but it does show that the complexity of ethical issues is increased when we embrace the shift in the understanding of disasters in which Sen played a key role. This shift has been ignored in much of the climate change debate. The discussion also points to a fundamental problem within the capability approach. We might argue that development can be understood in terms of freedom, but if we are to answer the question, 'Is development sustainable or not?' we need to evaluate the consequences of our doings and beings and what is happening to the environment. This expands the evaluative space and brings resources back into the picture, albeit seeing these as broader than income. It would also lead us to reject the Human Development Index (HDI) as a stand-alone figure which does not relate to the environment.

Sen's work on famines was path-breaking and a significant achievement in itself. He has had an enormous impact on development studies, policy, and practice (through the HDI) and made a significant contribution to the theory of justice as a critic and protagonist. The sad paradox is that the development Sen envisages will lead to more disasters by ignoring sustainability issues. Thus, while we need to reduce people's vulnerabilities by increasing their freedoms and adapting to climate change, we must also engage in actions to mitigate and reduce hazards more generally. We must establish which freedoms are legitimate and which can be reasonably rejected.

Communitarianism: As with any approach to moral thinking and choice, communitarianism cannot be neatly summed up and described without philosophical controversy. Thinkers in the communitarian tradition subscribe to different versions of the theory and emphasize alternative aspects of it. For the classical expression of philosophical communitarianism, see Walzer (1984), MacIntyre (2007), Taylor (1992b), and Sandel (1998). The philosophical articulation of the

communitarian moral view was, in large part, a critical response to John Rawls's *A Theory of Justice* (1999), first published in 1971, that revitalized political philosophy and that fixed a liberal moral and political view as the dominant normative outlook in political philosophy. In response to Rawls' work, the main themes of ethical communitarianism were articulated in the 1980s. In later decades, communitarian political literature, less concerned with the niceties of philosophical debate and more concerned with a critique of Western culture, emerged.

There is a further epistemological dimension to the communitarian criticism of universalist liberalism. Communitarians are skeptical about claims to the authority of Reason, or of human nature, of universal human rights, and so on – each of which purports to ground and justify the universal normative claims of liberalism. Instead of transcendent universalist values, communitarians avert to the authority of practice and tradition anchored in a particular, historically located community. Hence, the critique of universalism is that moral and political values are particular to communities and that knowledge of these values comes from an education in and participation in the traditions and practices of a particular community.

A consequence of rejecting transcendent moral and political values is that, on the communitarian view, the source of a person's ethical outlook, her normative view on the world, is anchored in the particular circumstances of her upbringing and her ties to family and community. These are the values that make sense to her, that, as it were, illuminate the moral landscape for her. It follows that it makes no sense to adopt a neutral, impartial moral stance – in fact, such a stance is incoherent on the communitarian account. It also follows from this view that there is no Archimedean point from which to make judgments concerning the validity of one's moral outlook. Impartiality concerning moral judgments is thus also rejected by communitarians as a universalist liberal fiction. Moreover, the community out of which particularist values emerge is considered valuable. Since it is the source of our values, the community acquires a central place in thinking about and addressing moral questions. The community's composition and continuity are vital for a moral agency's foundation; instead of moral objectivity or impartiality, which are tied to the liberal universalist view, the communitarian calls for and requires an attitude of critical and reflective partiality towards one's community and its values. This attitude of partiality towards one's community, its norms, and historical continuity will be vital to assessing the communitarian contribution to thinking about disasters.

Disasters are extreme events that expose ethical theories to contradictions, conceptual confusion, and difficulties. Communitarianism is not immune to these challenges. For example, the sorts of community virtues championed by communitarians,

in particular political communitarians, such as good neighborliness, family support, and community togetherness, are, in some extreme circumstances, likely to lead to worse rather than better outcomes. It would be a service to the literature for a communitarian position on these extreme circumstances to be fully articulated and defended. While a communitarian approach to disaster theory is initially attractive because of its emphasis on the community's role in preparing for and mitigating the consequences of disasters, much more philosophical work needs to be done to articulate a communitarian approach fully and respond to its several criticisms.

Conclusions

Ethical justification for actions taken in the face of disasters needs recourse to normative traditions, and this research attempts to provide setting the stage for more focused normative debates. Since disasters often involve making decisions for the good of many. Consequentialist ethics is often the preferred moral approach in disaster settings where decisions affect more significant numbers, not just individuals. This approach is suited to political decision-making, especially in the domain of international relations and also in disaster settings. In such large-scale contexts, consequentialism is most adequate as a moral theory. However, other situations require different approaches to ethics.

The importance of saving more lives in disasters, but notes that emergency ethics will accept that not everyone can be saved. This approach can lead to a neglect of other important values, including human dignity, justice, and human rights. Disasters have a way of leading to the neglect and violation of human rights. While some have criticized the adequacy of a human rights approach, this paper provides reasons to redefine humanitarianism in terms of rights. The concept of vulnerability is a core notion in continental philosophy. Vulnerability has emerged as a critical principle in global bioethics and is especially salient in the context of global disasters. Its usefulness partly arises because it highlights the conditions that produce vulnerability and how these might be ameliorated rather than focusing on the emergency decisions needed in disasters.

The broader and longer view of disasters is continued as this paper applies Amartya Sen's capabilities approach to disasters. This research sees a clear connection between Sen's work and disasters because Sen emphasizes the social context in which hazards occur. Sen's early work on famines explored their social dimension, mainly how famines arise not because there is no food but because certain people in society lack entitlements to food. Sen's early work has been criticized as incomplete, but it overlaps the importance of poverty and vulnerability in causing disasters. Sen moved into a normative framework in developing his capabilities approach. Sen points to weaknesses in resource-based approaches, such as Rawlsian views of justice, and end-state

approaches, such as consequentialism. Examining how the capabilities approach could contribute to normative discussions with disasters while acknowledging the challenges in such an endeavor.

In communitarian ethical theory, the contribution of communitarian ethics to disaster ethics simultaneously reflected its philosophical difficulties and weaknesses. A communitarian lens can identify ethical issues that other ethical perspectives might underemphasize. Instead of Rawls's impartial moral stance, the communitarian ethical theory emphasizes all people's social and cultural roots and brings them to their ethical decision-making. This approach is skeptical about the states and their agencies' values, preferring local community autonomy. Little has been written on how communitarian ethics applies to disasters, something odd given the emphasis on community in disaster literature.

Virtue ethics has been revived recently, adding a distinctive and thought-provoking perspective on disasters. Western virtue ethics begins with Aristotle and moves through Hume, MacIntyre, and Slote. Exploring the virtue of resilience, including perseverance, is a promising avenue for further research exploration. Immanuel Kant's discussion of virtues is not just a formally ideal ethical theory, but it also possesses an ethical account of virtues. Kantian deontological virtues directly apply to the problems caused by disasters in the real world. He examined this debate much earlier and concluded that ideal theories were compatible with nonideal approaches. His explorations in helping those in need and poor conditions apply to recent disasters. Kant developed two duties of virtue, namely, the duty of justice and the duty of beneficence.

Thus, ethical dilemmas are increasingly recognized as a paramount disaster preparedness and response element. It will take careful research and engagement with affected communities to ensure this is done well.

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Peace Education in Experiential Learning Course: Gauging the Proficiency in Embedding Peace-Lens and Teaching Performance of Mindanao Prospective Teachers

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Abstract

This study aimed to determine the proficiency in embedding peace lens and performance of prospective teachers of Mindanao State University-General Santos during their teaching internship in Dadiangas West Central Elementary School during the 2nd Semester of Academic Year 2022-2023. Using embedded mixed method approach, this study employed survey, classroom observations and reflections to glean data from the prospective teachers and their cooperating teachers. Generally, the proficiency of the prospective teachers in embedding peace lens was described as outstanding with managing and utilization of various instructional materials including ICT to consistently support the learning targets of the peace-embedded lessons. The findings also reveal that there were few classroom observations where pre-service teachers found it difficult to connect the skills and knowledge from multiple sources and experiences. The result yielded that prospective teachers exhibited outstanding teaching performance. In addition, the analysis shows that prospective teachers are more

likely to demonstrate improved performance during teaching demonstrations if they are successful in embedding peace lens ideas into the teaching-learning delivery. Hence, this study recommends for provision of thorough instruction on the principles and practices of peace education before their internship and offer continuous coaching support and resources to aspiring teachers for them to effectively embed peace education across subject areas.

Key words: *peace education, proficiency, teaching demonstration performance, Experiential Learning Course, prospective teachers,*

Introduction

Peace education nowadays has become an important element. Embedding peace lens in the curriculum has never been more crucial than it is now, given the complex challenges the world faces with regards to societal divides. As a response, peace education encompasses addressing the underlying causes of conflicts, promoting social justice, and encouraging sustainable development in addition to the promotion of peaceful coexistence. It encourages students to engage in productive discourse, appreciate diversity, and critically assess issues.

In the Philippines, peace education has become an essential instrument for tackling the nation's long-standing problems with armed conflict and bloodshed. In 2006, President Gloria Macapagal Arroyo issued Executive Order 570, mandating the DepEd to mainstream peace education into the basic formal and non-formal education curricula, utilizing existing peace education exemplars and other peace-related modules, and to enhance supervisors, teachers, and non-teaching personnel's knowledge and capability on peace education through the conduct of peace education workshops. Additionally, the order directed the Commission on Higher Education (CHED) to incorporate peace education into teacher education.

In 2019, the Department of Education Order 32 was also issued to provide national policy framework on learners and Schools as Zone of Peace. The Framework defined the components and guiding principles in the declaration and establishment of Schools as Zone of Peace. Recently, the Department of Education priorities include peace education in the K-12 curriculum. Duterte-Carpio (2023) stated that DepEd will make an effort to teach peace competencies. However, due to a lack of a comprehensive implementation plan for executing the framework, establishing the infrastructure, and monitoring and assessing the results, peace education in the country has often fallen short of its anticipated results.

Despite the difficulties in successfully implementing peace education, Mindanao State University has made many efforts to carry out its special mandate to sustain the gains of peace by integrating Mindanao's cultural communities into the country's socio-cultural and political life through high-quality and relevant public education. As a key

institution in this cause, it made significant efforts for peace and development. Through BOR Resolution No. 224, S. 2001, the Institute for Peace and Development in Mindanao (IPDM), which is housed in the Office of the University President with campus satellite components, was established. The IPDM serves as the peace and development arm of the university which aims to amplify the efforts in advancing the cause for national unity, integration and sustainable peace through peace education, peace research and peace action. In 2017, the MSU system BOR approved the Resolution No. 356, S. 2017 which mandated the offering of a three-unit Fundamentals of Peace Education (FPE 101) course in all undergraduate programs of the university. This course was designed to make the students understand the value of life, human dignity, and respect for religious and cultural diversity, all of which are essential in developing them as peace builders and peace advocates.

Moreover, the Bachelor of Elementary Education Department of Mindanao State University has piloted the initiative to encourage the prospective teachers in embedding peace lens in the delivery of their lessons during their Experiential Learning Course or Teaching Internship. This is in acknowledgement of the idea that the Teacher Education Institution play a crucial role in implementing peace education. According to the research study's findings, the majority of teachers and aspiring educators are in favor of including peace education in pre-service teacher preparation (Amin et al., 2019). Thus, it is necessary for the prospective teachers to be trained on how to deliver lessons that incorporate peace themes. Bashir and Akbar (2021) strongly suggested the inclusion of peace education suggested into the teacher education curriculum.

The potential for peace education to foster good societal changes has been highlighted in several studies that have examined the impact of peace education in diverse situations (Salomon, 2012; Hicks, 2014). However, little study has particularly examined the ability of pre-service teachers to teach by including a peace lens into their lessons. Understanding their practices and approaches to implementing peace education might offer insightful information about how teacher preparation programs can be improved to better prepare future educators.

Statement of the Problem

This study aimed to determine the proficiency in embedding peace lens and performance of prospective teachers of Mindanao State University-General Santos during their teaching internship in Dadiangas West Central Elementary School.

Specifically, this study sought answers to the following questions:

1. What is the level of proficiency of the prospective teachers in embedding peace lens in the delivery of their lesson?

2. What is the level of teaching demonstration performance of the prospective teachers?

3. How does the teaching proficiency of the prospective teachers in embedding peace lens influence their teaching demonstration performance?

Research Design and Instrumentation

This study employed embedded mixed method design which focused on the prospective teachers' delivery of lessons embedded with peace lens. It was designed to describe the teaching proficiency of prospective elementary teachers from Mindanao State University-General Santos City during their internship. This design was appropriate because the combination of quantitative and qualitative data was made possible to gain a more-in-depth understanding of the teaching proficiency of pre-service teachers. In this research, practices of the pre-service teachers on embedding peace lens throughout their internship were determined. These practices were monitored and assessed through the conduct of classroom observations. These observations were supplemented by survey and review of the documents such as lesson plans and reflection papers of pre-service teachers.

Several tools were used to determine the ability of the pre-service teachers to embed peace in their lessons throughout their internship. The main tool used for evaluating their practical implementation of peace-embedded teaching practices were classroom observation. The supervising teacher, cooperating teachers and master teachers kept close eye on the classroom activities, noting how the pre-service teachers embed peace in their lessons. Meanwhile, 5-point Likert Scale was also administered to thirty (30) cooperating teachers to describe the practices of pre-service teachers on embedding peace in their lessons. In addition, five (5) open-ended questions were also served as their guide in the writing their reflection on their teaching internship.

Participants and Data Collection

The participants of this study were the thirty (30) cooperating teachers who were officially employed at Dadiangas Wet Central Elementary School during School Year 2022-2023 as well as their thirty (30) pre-service teachers from Mindanao State University General Santos. In this research, the cooperating teachers observed the student-teachers from Mindanao State University for a period of three (3) months. With a total of eight (8) classroom observations, the delivery of the lesson embedded with peace lens was assessed. Also, thirty (30) survey forms were distributed to the cooperating teachers, which were all completely filled out after five (5) days.

In addition, the student-teachers were asked to write and submit reflection paper which allowed them to evaluate their experiences in the delivery of their lessons. The paper focused on how the teaching demonstration helped them accomplish

their goal and how did it supported their growth. The lesson plans of the student-teachers were also reviewed to identify the areas where integration of peace lens was evident.

Data Analysis

The rating of the prospective teachers in their teaching demonstration was the outcome (dependent) variable, while the survey questionnaire on proficiency in embedding peace lens answered by the cooperating teachers was the independent variable. Descriptive statistics such as frequency count, percentage and weighted mean were used for the quantitative analysis of the data. In addition, Pearson Product Moment Correlation Coefficient was utilized to determine whether the teaching proficiency in embedding peace lens does contribute to the teaching performance of prospective teachers. In addition, qualitative analysis was also made to support the quantitative data.

Results and Discussion

The purpose of this study was to determine the teaching proficiency in embedding peace lens and performance of prospective teachers of Mindanao State University-General Santos during their four (4) months teaching internship in Dadiangas West Central Elementary School during the 2nd Semester of Academic Year 2022-2023. Table 1 presents the level of teaching proficiency of prospective teachers in embedding peace lens in the delivery of their lessons.

As shown in Table 1, the cooperating teachers observe that the prospective teachers from Mindanao State University-General Santos always manage diverse instructional materials including ICT to consistently support the learning targets of the peace-embedded lesson (4.87) and utilize appropriate materials essential in achieving the goal of embedding peace lens in the area (4.83). The pre-service teachers demonstrate how to use technology into their lessons while promoting respect for diversity and inclusivity. In order to introduce their lessons and give students opportunity to participate, all pre-service teachers were observed to use Powerpoint presentations. They use graphics and bulleted information as well as embed videos that support the embedding of peace in the lesson.

"It is essential to contextualize as well as to present images in order to connect the students to the authentic world."

Aside from that, the pre-service teachers always contextualize the lesson to connect to the real-life experiences of the learners (4.80), use different questioning techniques to generate responses from the learners on peace-related topics and themes (4.80), and encourages the learners to actualize their learning into real-life situations (4.80). They always ensure that they bring the prior experiences of the learners in the classroom. During classroom observations, cooperating teachers noted that the

pre-service teachers always start with activities that allow the learners to bring their experiences in the classroom. The insight papers of the pre-service teachers echo that they find this effective because this can bring active and meaningful learning in the class.

Table L Teaching Proficiency of Prospective Teachers in Peace Lens Embedding (N=30)

Indicators	Weighted Mean	Description	Verbal Interpretation
The pre-service teacher...			
1. facilitates effective engagement to build new lesson from prior knowledge of the learners.	4.77	Always	Advanced
2. introduces the lesson in a various ways to connect peace, themes, topics, and concept.	4.70	Always	Advanced
3. contextualizes the lesson to connect to the real-life experiences of the learners.	4.80	Always	Advanced
4. uses different questioning techniques to generate responses from the learners on peace-related topics and themes.	4.80	Always	Advanced
5. asks essential questions related to peace topics and themes integrated in the lesson.	4.73	Always	Advanced
6. motivates the learners to freely ask questions to satisfy their curiosity.	4.73	Always	Advanced
7. presents peace-embedded lesson logically in a developmental manner.	4.70	Always	Advanced
8. facilitates varied peace education pedagogies suited to the different kinds of learners.	4.70	Always	Advanced
9. manages diverse instructional materials including ICT to consistently support the learning targets of the peace-embedded lesson.	4.87	Always	Advanced
10. employs different activities to develop the awareness of the learners on their peace values.	4.7	Always	Advanced
11. paces the peace-embedded lesson appropriately to respond to the needs and difficulty of the learners.	4.67	Always	Advanced
12. embeds integrative approach in the delivery of the peace-embedded lessons.	4.63	Always	Advanced

13. facilitates reflection activities for the learners to realize the meaning and relevance of the lesson to promoting peace.	4.73	Always	Advanced
14. incorporates socio-emotional learning dimension in delivery to develop empathy, solidarity, and respect for diversity among the learners.	4.63	Always	Advanced
15. facilitates activities to critically empower learners to make informed decisions.	4.77	Always	Advanced
16. initiates discussions to engage the learners in generating solutions to the critical issues.	4.77	Always	Advanced
17. encourages the learners to actualize their learning into real-life situations.	4.80	Always	Advanced
18. facilitates appropriate assessment strategies congruent to the objectives peace-embedded lessons	4.73	Always	Advanced
19. provides timely and appropriate reinforcement to the behaviors of learners that are promotive of peace.	4.73	Always	Advanced
20. utilizes appropriate materials essential in achieving the goal of embedding peace lens in the area.	4.83	Always	Advanced
Mean	4.74	Always	Advanced

“I used relevant real-life scenario or thought provoking questions to stimulate the interest of the learners. The content embedded with peace lens facilitated meaningful class discussions.”

Some examples of embedding peace lens in the lesson are integration of culture of sharing, conflict resolution, non-discriminatory hiring of employees and respect for diversity. In Mathematics class, culture of sharing was integrated in Mathematics lesson on finding the area of a circle. Activities provided to students when solving word problems also stimulate the learners to learn how to resolve the conflict in a given situation peacefully. In Edukasyong Pantahanan and Pangkabuhayan class, non-discriminatory hiring of employees was simulated. A pre-service teacher taught “serbisyo at produkto” by initiating an activity which made the students take responsibility of the hiring of production worker of tuna chorizo from applicants coming from different tribes (Blaan, Ilonggo and Maguindanaon).

“Peace lens integration emerged as crucial element for creating an engaging classroom environment.”

In addition, respect for diversity was always a part of cooperative learning activities in the class. Since the pre-service teachers of Mindanao State University were trained in social laboratory for

coexistence, there is automaticity for them to advocate respect for people coming from different background. This practice was appreciated by the cooperating teachers as they shared that this is coherent with the promotion of Child Protection policy in the Department of Education. With their experience of integrating peace lens, they reflected that this practice is necessary.

“Taking into account the beliefs, traditions, and culture is essential to successfully promote and embed peace in the class.”

Generally, the proficiency of prospective teachers in embedding peace lens obtained a mean of 4.74 described as always. This implies that the prospective teachers are outstanding in embedding peace lens in their lesson. They are able to successfully integrate a peace lens into the way they teach students because of the training they received from the university that encouraged them to learn about peace, knowledge, and attitudes. The 3-unit Fundamentals of Peace Education (FPE101) course, which is a requirement for all undergraduate programs at Mindanao State University, was taken by the pre-service teachers in this study. This course was designed to produce students who value peace, are change agents or change accelerators, peace advocates, champions of peace, and builders of a culture of peace.

From the result, prospective teachers are found to be excellent at using instructional materials that embed peace. This can be attributed to their exposure to various educational technologies that include the use of Information and Communication Technology. In the Philippines, Teacher Education Institutions, one of the program outcomes of the Bachelor of Elementary Education program was for the teachers to use tools and technology to accelerate learning and teaching. The pre-service teachers observed in this study have exhibited this outcome during their internship as they received trainings from their courses such as Technology for Teaching and Learning and their major courses. Kopca (2012) explained that teachers can regularly connect their lessons with peace because their exposure to a variety of instructional tools.

Pre-service teachers displayed the constructivist practices of active learning, student-centered approach, and real-life teaching. The constructivist approach of peace education is consistent with this practice. In line with constructivist theory (Piaget, 1970), students actively construct their view of the world by drawing on their existing knowledge and experiences. As observed, the pre-service teachers build on students' prior knowledge by contextualizing the lesson to relate to their actual experiences, making the lesson more relevant and useful. This approach boosts student engagement and enthusiasm for learning because students can apply topics related to peace to their own lives and communities (Vygotsky, 1978). Constructivist peace education also encourages students to apply what they have learned to actual situations. By using

peace-related knowledge in practical contexts, students develop problem-solving abilities and the confidence to address differences in their communities without resorting to violence (Dewey, 1938). In order for students to actively participate in fostering peace, teachers are crucial in assisting them to apply what they have learned in the classroom to real-world situations (Boyle-Baise, 2002). The constructivist theory that learning is most successful when it is incorporated into meaningful experiences is supported by this pedagogical approach. It equips students with the information and perspective necessary to promote peace.

Teaching demonstrations are essential parts of the teacher training process because they give prospective teachers an opportunity to present their abilities in a real classroom context. Table 2 shows the performance of prospective teachers from Mindanao State University-General Santos in delivering their teaching demonstrations.

Table 2: Performance of the Prospective Teachers in Teaching Demonstrations

	f	Percenta	Remarks
96-100	23	77 %	Excellent
90-95	7	23%	Very Good
85-89	0	0	Good
80-84	0	0	Above
75-79	0	0	Average
Below	0	0	Poor
Total	30	100%	

Table 2 shows that 77% of prospective teachers received "excellent" ratings and 23% received "very good" ratings in their teaching demonstrations. Based on this result, majority of the pre-service teachers from Mindanao State University-General Santos have demonstrated exceptional skills in the delivery of their lesson while almost a quarter of the pre-service teachers received very good rating which still shows a solid performance, albeit being just short of the outstanding level. These pre-service teachers probably did a good job in delivering their lessons, although there may be some space for growth or refinement.

Generally, the pre-service teachers from Mindanao State University-General Santos exhibited outstanding teaching demonstration performance. This entails efficient lesson preparation, interesting teaching strategies, and the capacity to modify their strategy to accommodate various learning requirements. They excelled because they were trained to deliver lessons for elementary learners. The comprehensive and rigorous teacher education program they had at the university includes a

combination of theoretical knowledge with practical teaching experiences. For example, they take both professional and major courses from first year to third year to ensure they receive adequate training and preparation for teaching elementary learners. In their pedagogy subjects, they are required to perform teaching demonstrations.

In the context of Vygotsky's sociocultural theory of education, a strong curriculum, knowledgeable professors, experienced cooperating teachers, and motivation can all be attributed for the excellent teaching performance of pre-service teachers from Mindanao State University-General Santos. According to Vygotsky's theory, because learning is a social process that occurs via interactions with others, cultural context has a substantial impact on a person's ability to learn. In this case, pre-service teachers are trained by the university using well-designed curriculum that encourages the integration of a peace lens. Their professors or supervising teachers mentored and directed them so that they could absorb appropriate and responsive teaching methodologies including integration strategies to incorporate peace lens in the delivery of their lessons. Also, the pre-service teachers are given beneficial opportunities to engage in authentic teaching experiences and receive prompt feedback from cooperating teachers in real classroom settings, which helps them develop their practical skills and confidence. In addition, the pre-service teachers displays enthusiasm for continuous learning.

Table 3: Relationship between the Teaching Proficiency in Peace Lens Embedding and Teaching Demonstration Performance of Prospective Teachers

Variables	Correlation Coefficient (r)	r ²	p-value	Remarks	Decision
Teaching Proficiency in Peace Lens Embedding	0.4307	0.1885	0.017	Significant	Reject Ho
Teaching Demonstration Performance					

Table 3 presents the statistical analysis on whether the teaching proficiency in peace lens embedding contributes to the teaching demonstration performance of the pre-service teachers. The findings show a fairly positive relationship between the two variables, with a computed r-value of 0.4307 and a p-value of 0.017. This positive correlation shows that when prospective teachers show a higher proficiency in integrating the peace lens in teaching-

learning, they are more likely to do well during teaching demonstration. Although the link between the two variables in this case is not very strong, it tends to get stronger as one variable rises, as seen by the positive correlation coefficient.

According to the degree of linkage, there is only a tangential relationship between teaching proficiency in embedding a peace lens and teaching demonstration performance of prospective teachers. The correlation is statistically significant because the p-value is below the standard significance threshold of 0.05. However, the teaching proficiency in peace lens embedding may only account for a little fraction of the variation observed in teaching demonstration performance, despite the fact that there is a statistically significant association (r²=0.1885).

Interestingly, the findings uncover that the future educators who adopt a peace perspective into their practices are more likely to show increased performance during teaching demonstrations. By encouraging a peaceful and inclusive learning environment, these teachers support strong student engagement, effective classroom management, and positive teacher-student connections. When a teacher encourages a peaceful classroom, the learning process is positively impacted in a variety of ways. According to studies, creating a peaceful climate in the classroom improves student involvement, makes it easier to manage the class effectively, and strengthens teacher-student relationships (Hoy, 2019). Teachers that prioritize promoting harmony and inclusivity support the creation of a welcoming and productive learning environment for their students, which improves overall teaching effectiveness. Additionally, Jennings and Greenberg (2009) asserted that teachers' performance in the classroom is improved when they place a high value on fostering inclusivity. As a result, this promotes a positive and productive learning atmosphere for the students. When a safe and inviting environment is given for them, students feel valued and respected, which boosts their engagement, motivation, and active participation in the class (Lewis et al., 2018).

Conclusions

Generally, the prospective teachers from Mindanao State University General Santos have generally changed how teaching and learning are delivered. They have integrated peace themes including respect for diversity, conflict resolution, and a culture of sharing in teaching elementary learners in public elementary schools due to their advanced level of proficiency in embedding a peace lens. Evidently, the prospective teachers have worked to include concepts related to peace while adhering to constructivism, contextualization, cooperation, active learning, and real-world connections teaching. The prospective teachers' proficiency gained during their training at the College of Education has

encouraged them to implement lessons using a lens of peace.

The prospective teachers in this study have exhibited very good to excellent performance in teaching. With their preparation before internship, they have planned out and implemented their lessons well with integration of a peace lens. They meticulously planned a pedagogical repertoire that is inclusive and peaceable as a result of the BEED Department's initiative of encouraging students to integrate the peace lens, which in turn contributed to their great performance during their teaching demonstration.

This study comes to an understanding that teaching performance can be influenced by how well a peace lens is integrated. Teachers are more likely to succeed during teaching demonstrations when they integrate the peace lens with more proficiency. Although the link between the two variables is not very strong, it tends to get stronger as one variable rises. Teachers who adopt a peace perspective into their teaching practices are more likely to show increased teaching performance.

Recommendations

Based on the analysis and findings of this research, the following recommendations are presented:

1. Mindanao State University and the Department of Education can consider initiating series of activities to develop a manual for designing lessons embedded with the peace in the context of teaching internship;
2. The College of Education can conduct training needs assessment of pre-service teachers and cooperating teachers in embedding peace lens in the delivery of lessons for elementary teacher;
3. The Bachelor of Elementary Education Department can standardize the provision of thorough instruction on the principles and practices of peace education before deployment of the prospective teachers in the cooperating school and offer continuous coaching support and resources to aspiring teachers for them to effectively embed peace education across subject areas.
4. Teacher Education Institutions can endeavor to design and implement a capacity building program to train the prospective teachers on writing and delivering lesson exemplars embedded with peace lens; and
5. A evaluation study can be endeavoured to determine the relevance, coherence, effectiveness, efficiency, sustainability and impact of peace lens integration of prospective teachers in the pursuit of quality education and peace.

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