

Trash versus Treasure

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In 2014, returning from a tour of the remote *gewog* of Lauri in Samdrup Jongkhar, I skirted the base of a village and entered a dense forest. As I admired the verdant vegetation, an incongruous sight greeted me: a hand painted notice placed atop a stick. Written in Dzongkha and English, it alerted travellers to use the pit to dispose their waste. Inside were plastic wrappers, tetra packs, and juice and mineral water bottles. Roads and electricity were yet to come in to Lauri then but waste had already claimed its spot even in the bucolic hamlets and the wilderness.

Conserving the environment is one of the four pillars of Gross National Happiness (GNH), expanded to embrace ecological diversity and resilience as one of the nine domains used to calculate the GNH index. The ecological diversity and resilience domain is used to “track people’s perceptions and evaluations of environmental conditions in their neighbourhood and their eco-friendly behaviours”.¹

A GNH survey of 2015 revealed increases in two indicators but a “decrease in felt responsibility to the environment”, a development that our planners and policy makers need to take note of. This decrease is a worrisome change that has the potential to morph into a paradigm shift, taking us from a state of awareness and leadership to that of complacency and carelessness.

In 2005, presenting the Champions of the Earth award to Bhutan, the United Nations Environment Programme said: “...Bhutan’s track record is quite impressive, with more than 74 percent of its land under forest cover, and 26 percent of this cover designated as protected areas. Also notable are the country’s long-standing legislation and policies that ensure the sustainable use of resources, promote community involvement in environmental activities, improve land use planning, and integrate traditional with modern natural resource use practices.”²

Today, our well-preserved natural heritage attracts high-end tourists. A 2015 document published by the Tourism Council of Bhutan contains findings based on a survey of 5,000 tourists. 25 percent of the visitors expressed concern about our country’s improper waste management. The finding is an embarrassment for a country that markets itself as a pristine and eco-friendly destination. Like me, many

¹<http://www.grossnationalhappiness.com/SurveyFindings/Summaryof2015GNHIndex.pdf>

²<http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=430&ArticleID=4775&cl=en>

of the tourists had encountered littering in the environment, on trails, and in cities and villages.

Why are we getting more wrongs and few rights when dealing with trash? Before we jump to the quick solutions such as conducting more cleaning campaigns, placing more dustbins and building more landfills, it behoves us to make a pilgrimage to the very destination where a majority of our waste ends up these days.

The Unbearable Randomness of Dumping While Our Landfills Runneth Over

A quick linear representation of modernisation in Bhutan could begin with the construction of motor roads followed by the arrival of electricity, telecommunications, tourism, aviation, television, the Internet, and mobile phones. While these landmark changes were heralded with celebrations, plastic slid into our lives in a sly and odourless fashion. Like the arrival of plastic, the creation of waste is also a camouflaged process. But its disposal becomes a noisy, foul, and toxic affair.

A 2015 article in Kuensel says lack of collection vehicles and landfill sites are two major issues faced by municipal and dzongkhag administrations.³ But by now, we should know solving these issues does not take the problem away. From the early years of this century, the Memelakha landfill for the capital city made news for the wrong reasons. In 2008, the prime minister who was then the opposition leader wrote in his popular blog: “The landfill was built in 1992 and was designed to last for 10 years. But the actual landfill lasted only for 6 years”.⁴



Landfills around the country become a part of the scenery
Photo Credit: Samdrup Jongkhar Initiative

³<http://www.kuenselonline.com/problem-of-waste-mis-management/>

⁴<http://www.tsheringtobgay.com/nature/2008/thimphus-shame.html>

In my 15 years of reporting for the Bhutan Broadcasting Service Corporation, an often delivered line that I used to hear from our leaders was that being a latecomer on the development bandwagon, Bhutan had the luxury to learn from the mistakes of others. As the saying goes, the wise learn from the mistakes of others. Where is our wisdom when it comes to waste management?

Landfills by their very nature can never fall in the eco-friendly realm.⁵ The above Kuensel article reports that Trongsa's only landfill constructed in 2003 is full to the brim and Paro's is also reaching capacity. In the south, Panbang will soon get its own landfill.⁶ Meanwhile, residents have been dumping waste in the nearby forest. When interviewed by the paper, a resident agreed that the plan to build a landfill is good. A survey found that solid waste had "severely infested" 626 acres of forests in the Wangdue Forest Division.⁷

And landfills don't come free. Gelephu, which had five "improper dumping sites" in 2013, will spend Nu. 3 million to increase the volume of the existing landfill.⁸

A Matter of Transition

Will the construction of landfills and capital investment in waste management become a panacea for the challenges plaguing our municipalities and local governments as we deal with increasing waste generation? As we evolve from a predominantly agrarian society and try to segue into a use-and-throw society, inhabiting the concrete jungles of urbanisation, modernisation and globalisation, are we applying permanent solutions to solve problems presented by our transition?

At the annual *Tshechu* of the picturesque village of Wooling in Samdrup Jongkhar, residents come with bags filled with food and drinks. Reunions and interactions are marked by offerings and consumption of beverages. Old meets new as the elderly in their resplendent *kiras* fish out Sprite bottles and pour the globally consumed aerated drink into heirloom wooden bowls of recipients dressed in their *Tshechu* best.

When the Sprite goes down in a gulp, a piece of cloth is fished out from the folds of the *ghos* and *kiras* to wipe the cup dry and then tucked again within. The *phob toray* custom and its widespread usage in Wooling, is a blend of the traditional in a modern setting. It is a visual evidence of the transition that we are currently fording. Wooling is endowed with the potential to straddle the two realms of modernity and tradition with elegance and wisdom and it was because of this potential that Wooling was chosen as the site of a milestone project.

⁵http://ec.europa.eu/environment/waste/landfill_index.htm

⁶<http://www.kuenselonline.com/panbang-town-to-get-landfill/>

⁷<http://www.wangdueforest.org/2015/01/hard-tackling-solid-waste-problem.html>

⁸<http://www.gnhc.gov.bt/wp-content/uploads/2011/05/Eleventh-Five-Year-Plan-gelephu-Thromde.pdf>

A Zero Waste Project

In 2011, I joined the Samdrup Jongkhar Initiative (SJI), a civil society project started by Dzongsar Jamyang Khyentse Rinpoche. One of the first activities that we launched and secured funding for was a zero waste project for Wooling.⁹

Our aim was to REDUCE waste going to the landfill, dumping and burning. We focused on human and institutional development, raising awareness and most importantly, income generation. We promoted reduction, reuse, and recycling of discards.

We leveraged the traditional wisdom of the community to supplement internationally tested solutions. We engaged the community in selecting local zero waste trainers and setting up zero waste committees in each location to build ownership. We distributed an illustrated zero waste manual which is available online.¹⁰

We wove local skills with technology and expertise from India, Brazil, Sweden and the United States. A PET bottle cutting technology shared by an Indian craft specialist was leveraged by our trainer to make threads to weave materials for crafts on traditional Bhutanese looms.

In 2014, the Ministry of Works and Human Settlement awarded a certificate of appreciation to the SJI for “the innovative approach to waste management” in Wooling and Dewathang.

A Zero Waste Wheel of Existence

“Zero Waste means designing and managing products and processes to systematically avoid and eliminate the volume and toxicity of waste and materials, conserve and recover all resources, and not burn or bury them”.¹¹

Like in other countries, the forces of change that are busy at work in Bhutan do not differentiate urban from rural and spiritual from secular. Therefore, the fluid nature

⁹This extract is from page 3 of a progress report on the zero waste project:

(<http://www.sji.bt/assets/PDFs/Progress-report-SJI-Zero-Waste-Project-Jul-Dec-2012.pdf>)

“The aim of the Samdrup Jongkhar Initiative Zero Waste Project is to contribute to fostering ecologically friendly development efforts and support the environmental preservation pillar of GNH through design and implementation of Zero Waste strategies in Samdrup Jongkhar dzongkhag. More specifically, the aim is to initiate responsible and sustainable waste management practices that help preserve the environment and, at the same time, create economic opportunities in the region, thereby also contributing to the GNH pillar of promoting sustainable and equitable socio-economic development.

On a practical level the intention is that waste, in particular the use of plastics, should be minimized, and that segregation of waste should be implemented both at the household and institutional level in Samdrup Jongkhar dzongkhag, leading to the development of new small-scale recycling, re-use and up-cycling businesses for non-biodegradable waste, and effective use of bio-degradable waste for composting and future bio-gas generation.”

¹⁰<http://www.sji.bt/assets/PDFs/News/zero-waste-manual-small.pdf>

¹¹<http://zwia.org/standards/zw-definition/>

of change brought by rapid urbanisation and modernisation calls for solutions to come from all quarters in a bold and creative fashion.

In an advocacy video, Dzongsar Jamyang Khyentse Rinpoche says zero waste is in consonance with the philosophy of GNH.¹² Rinpoche advises against using items wrapped in plastics during *tsho* (feast offerings). Citing the waste generated and the resulting pollution, Rinpoche says these can lead to undesirable outcomes.

From his monastery in Dewathang to venues across the world, Rinpoche has been instrumental in promoting *zero waste tsho*, which has now picked up momentum across Bhutan and the Himalayan region.¹³

I've heard zero waste proponents talk about the cyclical approach over the linear. In a Bhutanese context, one can envisage a zero waste wheel of life. A circle of consumption would replace the inner circle of three delusions of ignorance, passion and aggression. Outside this would be the six realms of waste disposal and management: dumping, burning and landfills would occupy the lower realms and reduce, reuse and recycle would reside in the upper half. The best realm in this hierarchy would be “reduce” as manifest in Chapter II of the Waste Prevention and Management Act of 2009.¹⁴

The final ring of the circle, which is traditionally reserved for the 12 interdependent links of origination, would have the cyclical approach of waste management starting with resource extraction and ending with disposal. Outside this circle, on the upper right would be a lotus, symbolizing zero waste. The zero waste wheel of existence would be complete with a full moon on the upper left signifying Gross National Happiness.

In the classical *Sidpai Khorlo*, the wheel is under the clutches of Yama, Lord of Death. Yama, who turns the wheel, represents time and as Rinpoche explains, time means uncertainty, impermanence, change.¹⁵ Today, more than ever, with the forces of modernisation and globalisation buffeting Bhutan from all quarters, the wheel of zero waste is moving faster, attaining higher revolutions per minute. Will Bhutan be able to keep up with the breakneck speed and harvest the bounty unleashed by this kinetic energy? Or will we lag behind and silently survey the trail of damage left by the tornado of change?

¹²<https://vimeo.com/20970407>

¹³<http://kuenselonline.com/archive/the-ecological-fallout-of-religious-observances/>

¹⁴<http://www.moic.gov.bt/daden/uploads/2014/04/Waste-Prevention-and-Management-Act-2009English.pdf>:

“The purpose of the Act shall be to protect and sustain human health through protection of the environment by: a) reducing the generation of waste at source; b) promoting the segregation, reuse and recycling of wastes; c) disposal of waste in an environmentally sound manner; and d) effective functioning and coordination among implementing agencies.”

¹⁵<https://www.scribd.com/doc/238893621/Dzongsar-Jamyang-Khyentse-Rinpoche-The-Wheel-of-Life-and-12-Interdependent-Links>

Continuity

At the recently concluded *Rinchen Terzoed Wang* in Takila, Lhuentse, devotees had the chance to receive blessings and empowerments from Khyentse Rinpoche. During the breaks, devotees were informed on zero waste practices by Bhutan's former, and first, anti-corruption chief Dasho Neten Zangmo. Besides the advocacy, Dasho Neten Zangmo led a group of volunteers at Takila to develop a well-functioning waste management system based on the SJI's zero waste activities.



Coordinated by the SJI management, sorting garbage becomes a part of religious ceremonies
Photo Credit: Samdrup Jongkhar Initiative

A native of Samdrup Jongkhar *dzongkhag*, Dasho Neten Zangmo now heads the SJI and has accelerated the activities and widened the scope of the organisation. Assisted by a hardworking team, the SJI is consolidating its zero waste work in Wooling and Dewathang while expanding and extending in remote villages and schools of Samdrup Jongkhar. It has set up a women's zero waste craft group, material recovery facilities (MRF), segregation bins, zero waste committees, model waste reducers and community waste management funds. Besides partnering with organisers of religious events including *Tsbechu* like the one in Wooling, the SJI is engaged in a stream of capacity- and awareness-building activities ranging from shoe repair workshops to carrying out advocacy through large-scale zero waste festivals.

Growth and Challenges

The World Bank says the first decade of the 21st century saw Bhutan recording the highest growth rate of urban population in South Asia at 5.7 percent per year.¹⁶ It adds that Bhutan's urban population is expected to increase from 253,000 to 434,000, between 2010 and 2030. This increase will add to the already mounting challenge of

¹⁶<https://openknowledge.worldbank.org/handle/10986/22549>

finding a working waste management system in Bhutan.

These lines from a 16 May 2016 Kuensel story captures the magnitude of the present situation:

Paro Dzongkhag Tshogdu (DT) chairman Phub Tshering attributed the waste management issue to the mindset of the people, lack of awareness and poor implementation of the Waste Management Act (sic). “Waste management is a major issue in all the 10 gewogs and the issue is highlighted in almost all the DT sessions”, he said.

Minor Successes

The journey towards zero waste is a long one demanding constant effort, attention, education, awareness, civic engagement, behaviour change, resources, collaboration, technology, innovation, public private partnership, the right policy interventions, an environment friendly legal framework, and more.

In April 2014, Dewathang shopkeepers initiated the move to stop giving plastic bags to customers. One of the alternatives was cheaper reusable bags sewn by local tailors from reclaimed clothing.

In Wooling, the zero waste committee has bought land and improved the existing material recovery facility (MRF). Besides preventing dumping and burning, the MRF will help in segregation of waste and providing materials to local weavers who produce craft from materials sourced from the MRF.

At the first ever zero waste festival conducted in Dewathang in September 2012, a zero waste worker from India stressed the importance of having micro grassroots level zero waste initiatives. Together, he said, these tiny ponds would one day lead to the formation of a zero waste lake, a sea and an ocean.

A Beacon of Hope

If this article has used Kuensel as a source to cull stories of our failures in waste prevention and management, the following report would be the right place to present a beacon of hope; a zero waste pond with the potential to replicate and upscale. This zero waste success story from the 5th July edition of Kuensel assumes great significance given the relatively miniscule budget of one fifth of a million used to implement a ground breaking project:

Realising the importance of waste management, Pemathang gewog has allocated Nu 200,000 to start its own zero waste management system.

Pemathang is the first gewog in Samdrupjongkhar to come up with such an initiative through the gewog's budget instead of waiting for other organisations to fund such waste management programmes.

In less than a year, the initiative has proven successful wherein almost all the villagers are now concerned about waste in the gewog. Waste in the gewog has also decreased drastically, according to the villagers. PET bottles are neatly stacked to be recycled and reused.

Villagers said that as they are now aware of the importance of waste management, dumping and burning of waste has also minimised unlike in the past. Villagers also said that they are working hard to keep the initiative alive and not let the budget go to waste because not only structural development is important but also waste management.

The success of the programme is attributed to the technical support from Samdrupjongkhar Initiative...¹⁷

A National Perspective

My only passport to writing this paper is my fundamental duty as a citizen as enshrined in our Constitution: "A Bhutanese citizen shall have the duty to preserve, protect and respect the environment, culture and heritage of the nation."¹⁸

The Ministry of Works and Human Settlement pegs the percentage of organic waste in urban Bhutan at 49 percent.¹⁹ The figure would be higher for rural settlements. Segregation and composting can resolve a significant chunk of the challenge. It can reduce pressure on landfills, increase the lifespan of landfills, and minimise toxic leachate formation. Compost sale can generate revenue for municipalities and less investment will be required for maintenance, expansion and construction of new landfills.

Bhutan has already demonstrated its ability to reduce tonnes of waste from going to dumpsites and landfills.²⁰

¹⁷<http://www.kuenselonline.com/for-a-waste-free-initiative-in-pemathang-gewog/>

¹⁸Article 5.1 of our Constitution gives more depth and breadth to the above fundamental duty: Every Bhutanese is a trustee of the Kingdom's natural resources and environment for the benefit of the present and future generations and it is the fundamental duty of every citizen to contribute to the protection of the natural environment, conservation of the rich biodiversity of Bhutan and prevention of all forms of ecological degradation including noise, visual and physical pollution through the adoption and support of environment friendly practices and policies.

¹⁹http://www.uncred.or.jp/content/documents/Country%20Analysis%20Paper_Bhutan.pdf

²⁰Greener Way's homepage (<http://www.greenerway.bt>) has figures on waste diversion

Some Submissions to Our Government

I have four submissions to our government:

1. Develop a composting technology suitable to the needs of urban and rural Bhutan.
2. Devise strategies to divert organic waste to biogas plants in both urban and rural Bhutan.
3. Request and enable the Pemathang Gewog Administration to make a presentation on the zero waste experience when the elected leaders and officials of local government meet at a national level. Explore and secure funding to implement similar projects in all 205 *gewogs*.
4. Provide clearance for dumping sites and landfills to communities, organizations, businesses, industries and municipalities in rural and urban Bhutan only upon fulfilment of the following:
 - a) Segregation at source is followed strictly
 - b) Sufficient Material Recovery Facility stations are put in place
 - c) Composting facility is operational
 - d) Bins for segregation are provided
 - e) Waste recycling businesses are operational
 - f) Residents pay for volume of waste generated
 - g) Waive waste collection and disposal fees if residents practise segregation. My argument is that the cost of building, maintaining and extending dump sites and landfills far exceeds the revenue from fees collected from residents. This waiver would be the incentive for residents to accept and practice segregation.

Given the pool of trained professionals and the expertise that we have, the government can accelerate or kick start the process for a national landfill directive formulation. Incorporating zero waste in the curricula of schools, colleges, and institutions will also remove the need to carry out expensive advocacy programs.²¹

In writing this paper, I began the process by laying out a set of questions, which I list here in the hope that more resourceful researchers will discover answers so that our zero waste journey is shaped by science, data, and evidence.

1. Budget allocated to waste management on a national level
2. Volume of waste generated annually on a national level
3. Number of people employed in the waste management sector
4. Number of transfer stations in the kingdom
5. Percentage of segregation level achieved
6. Number of waste recyclers in the nation

²¹The SJI's zero waste manual is available for free distribution. A video version of the manual is available in Dzongkha and English.

7. Composition of waste
8. Number of compost production centres operating on organic waste
9. Number of bio-gas units operating on organic waste
10. Number of open dumpsites in the nation
11. Number of landfills

An Aspiration

Yama, the Lord of Death, keeps on turning the *Sidpai Khorlo*. The work of the combined agents of change (roads, electricity, education, telecommunications, the Internet and globalisation) means that we will always be in motion and a state of consumption.

The tell-tale signs of our consumption overdrive are all there to see. While litter seems to affect us visually, very soon the dumpsites and landfills will start attacking our olfactory sense.

As a generation educated in Bhutan and abroad, a generation born during the birth and proliferation of GNH, a generation that ushered Bhutan into the digital world, and a generation that made the historic transition to a democratic constitutional monarchy, we have all the causes and conditions to act upon with immediacy and urgency. In doing so, we can leave a modern 21st century version of a practical zero waste philosophy based on the wisdom of our traditions and the manifold skills of science and technology.

Great beings of the past referred to Bhutan as the land of medicinal herbs. Besides the myriad values of our rich environment, our natural heritage was the setting for the many spiritual treasures revealed and discovered by our great spiritual masters. Our forests and our cities, for now and in perpetuity, should be a trove of treasure, not a trash bin.

The time to act is now because tomorrow, if we continue with our present practice, we will end up bequeathing a legacy of litter, dustbins, dumpsites, and landfills.