

PROGRESS REPORT

SJI Zero Waste Project

Mid-term: July 2012 – December 2012

Implemented by: Samdrup Jongkhar Initiative (SJI)

Funded by: Civil Society Organization Fund Facility (CSOFF)

Drafted by: Pia Lindström, SJI Zero Waste Coordinator



TABLE OF CONTENT

TABLE OF CONTENT	2
SJI ZERO WASTE PROJECT	3
PROGRESS REPORT	5
ACTIVITIES, OUTPUTS, INPUTS.....	5
1. Institutional and human capacity development.....	5
2. Developing awareness.....	7
3. Developing economic diversification opportunities	12
OUTCOMES.....	15
FINANCIAL OVERVIEW	19
OVERALL ASSESSMENT	19
APPENDICES	20



SJI ZERO WASTE PROJECT

In Bhutan, as in most parts of the world, waste is becoming an increasing problem in urban, rural, and even remote areas, posing an escalating threat to environmental and human wellbeing. 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. Like all other SJI activities, the SJI Zero Waste Project is consistently carried out in close collaboration with key stakeholders in order to ensure local ownership and relevance. The design and implementation of the SJI Zero Waste Project is, in practice, also strongly linked with SJI's other areas of work (organic agriculture, appropriate technology and youth engagement). The SJI Zero Waste project has initially started with small-scale and low-cost model actions in select villages. Dewathang has been selected as the pilot urban village, and Wooling as the pilot rural village. The idea is to use these pilots as testing grounds to establish model villages for replication and scaling up of Zero Waste activities in other urban and rural villages in the dzongkhag, in order for Samdrup Jongkhar to become a model Zero Waste region from which other dzongkhags can learn, and which the nation can emulate in order to help realize GNH in practice. Main activities during the first project year are:

1. ***Institutional and human capacity development*** for promoting and facilitating responsible and sustainable management of waste through:

1.1 Setting up Zero Waste Committees in Dewathang and Wooling responsible for implementation and monitoring of Zero Waste strategies decided by the villagers.

1.2 Trainings of Zero Waste Trainers in the pilot villages, who are responsible for giving workshops on sustainable waste management practices and creating awareness of waste-related issues to schools and other institutions.

2. ***Developing awareness*** among the villagers on waste minimization and segregation through:

2.1 Zero Waste Festivals in Dewathang and Wooling.

2.2 Recycled art/craft workshops with youth in Dewathang.

2.3 Workshops by Zero Waste Trainers at schools and other institutions in the pilot villages.

3. ***Developing economic diversification opportunities*** through:

3.1 Promoting scrap dealer's organizations and small scale re-use and recyclables collection businesses in Dewathang and Wooling.

3.2 Establishing self-help groups engaged in up-cycling activities such as eco-friendly handicraft in the pilot villages.

3.3 Setting up a “Zero Waste Café” in Dewathang run by a self-help group consisting of local youth.

In order to be able to measure progress of the project, a baseline survey is currently also carried out measuring the ex-ante conditions of the waste situation in Dewathang and Wooling. It will be followed up by the end of the project cycle with an ex-post study, together with a self-evaluation of the relevance, effectiveness, efficiency, impact and sustainability of the SJI Zero Waste Project.

PROGRESS REPORT

The implementation of the SJI Zero Waste Project was initiated in July 2012, and has so far proceeded well in line with activities planned and budgeted resources, although some re-arrangements with respects to the time frame have been necessary to adjust to the ground realities of the Dewathang and Wooling communities and operations of SJI staff.

Below a description and brief analysis of activities, inputs and outputs is given in order to provide a clear picture of the mid-term progress of the SJI Zero Waste Project. An attempt is also made to relate the foregoing to community behavioural change at outcome level. Lastly, a financial overview is provided, stating resources spent and remaining balance together with minor requests for re-allocation of resources between certain budget lines in order to adjust for unexpected price increases and other project realities faced during the process of implementation.

ACTIVITIES, OUTPUTS, INPUTS

1. Institutional and human capacity development

1:1. Set up of Zero Waste Committees

Activity: After some explorative and informational stakeholder meetings with the Thrompon, District Environment Officer, Municipal Environment Officer, Town Representative (Tshogpa), Dewathang Primary School and Jigme Namgyel Polytechnic (JNP), the development of the Zero Waste Committee in Dewathang was initiated with a community meeting on 26 July 2012. It was attended by the Town Representative and approximately 30 community members from one of the three tshogpas (market area) constituting Dewathang. During the meeting the participants were asked to identify the current situation with respect to waste in the community and to suggest measures for improvement. The SJI team also presented the work of SJI and the SJI Zero Waste Project in particular including some awareness training. The issue of identification of a local Zero Waste Trainer was also raised. On 12 September another meeting was conducted with the two remaining tshogpas (represented by the Tshogpa leaders) of Dewathang community, covering the same issues and information. Since spontaneous formation of a formal Zero Waste Committee did not take place in Dewathang, the Zero Waste Coordinator instead decided to call various community stakeholders specifically working on waste in their respective institutions/localities (e.g. schools, university, Tshogpas, Municipal Environment Officer, sweepers, scrap dealers and SJI staff) for a meeting on 5 December 2012, where the Dewathang Zero Waste Committee was finally formed and the Zero Waste Trainer selected by the Committee. The Dewathang Zero Waste Committee currently consists of seven members from Dewathang Primary School, Jigme Namgyel Polytechnic (JNP) Waste Disposal

Club, Tshogpas and the SJI Zero Waste Coordinator and Zero Waste Trainer. The aim is that the Committee will expand its membership base during the course of the project and beyond.

The formation of the Zero Waste Committee in Wooling took place on 29 August 2012 during a community meeting attended by the Gup (Orong Chairman), the Wooling Tshogpa and approximately 30 community members. During the meeting the waste situation in Wooling was discussed, and Zero Waste strategies for improvement suggested. SJI also requested the community to try to identify a



local Zero Waste Trainer, who would be responsible for training the institutions in Wooling. The Gup and the Tshogpa selected thirteen representatives from the community meeting to form the Committee. The Zero Waste Trainer was discussed but was not formally selected until 13 December 2012.

Input: Budgeted input: 30.000 Nu. Accumulated actual input: 17.220 Nu (as per 12/12/2012).

Output 1: Establishment of local institutions and capacity for promoting and facilitating responsible and sustainable management of waste. Output indicator: 2 Zero Waste Committees set up (1 in Dewathang, 1 in Wooling). → **Output target achieved.**

1:2. Conduct trainings of trainers

Activity: The trainings of trainers will start on 1 January 2013. Due to prolonged process of forming the Zero Waste Committees, which are responsible for selecting the Zero Waste Trainers, and re-arrangement and re-scheduling of some of the project activities (notably the recycled art/crafts activities with VASD) the Zero Waste Trainers have been contracted to work for SJI and train the community on a full-time basis between 1 January 2013 – 30 June 2013, instead of on a longer term, part-time basis. A stipend of 8.000 Nu will be provided to the Zero Waste Trainers by the end of each month upon completion of her/his tasks. Formal training of the Zero Waste Trainers will be carried out during a five-day Zero Waste training with some of the world's foremost experts on Zero Waste (led by Mr. Shibu K. Nair from Thanal/GAIA), in order to gain necessary knowledge and skills for training the institutions in the community. The training will be held in Trivandrum, Kerala, India by the beginning of March 2013.

Input: Budgeted input: 96.000 Nu. Accumulated actual input: 0 Nu (as per 12/12/2012).

Output 1: Establishment of local institutions and capacity for promoting and facilitating responsible and sustainable management of waste. Output indicator: 2 Zero Waste Trainers trained (1 in Dewathang, 1 in Wooling) → **Output target not yet achieved.**

2. Developing awareness

2:1. Zero Waste Festivals

Activity: The Zero Waste Festival in Dewathang was held on 30 September 2012, jointly organised by SJI, Jigme Namgyel Polytechnic, Dewathang Primary School and the Samdrup Jongkhar Thromde.

Approximately 400 community members attended or volunteered during the festival, which started in the morning with the SJI Executive Director, Mr. Tshewang Dendup, welcoming the Chief Guest Dasho Thrompon and three visiting Zero Waste experts from India, Mr. Shibu K. Nair, and Mr. Dharmesh S. Shah and Ms. Shweta Narayan from Thanal/GAIA.

Dasho Thrompon delivered the welcome address to the community, highlighting the escalating problem of waste in the region, and the importance of addressing the issue at an early stage. The speech was followed by a tea break and Zero Waste dances were carried out by school children from Dewathang Primary School, who had made their own creative costumes out of waste materials. Elegant flowers made from plastic wrappers decorated the school children's hairs and kiras, and amazing creations made out of old straws, wrappes and plastic bottles were used as necklaces, bracelets and earrings.



After the Zero Waste dances, Mr. Shibu K. Nair and Mr. Dharmesh S. Shah facilitated a longer interactive discussion session with the community stakeholders on how to turn Dewathang into a full Zero Waste community. Mr. Shibu K. Nair mentioned that today we can see some “Zeros” here and there in the community, but the challenge is to integrate the whole community into the process of becoming a Zero Waste village. Discussions were broad and ranged from the basics of Zero Waste philosophy to the pros and cons of new technologies for waste management. Government officials, village leaders, school principals and teachers, army leaders and personnel, monastics, school children

and other community members all got a chance to get their questions answered on how to bring Dewathang closer to Zero Waste.



The discussion ended with the Chief Guest opening the workshops and exhibitions of the festival, starting with the recycled art workshop facilitated by Ms. Taylor Cass Stevenson from Livedebris (USA), where the children made useful and decorative items out of recycled materials. To mention a few: brooms made out of plastic

bottles, coasters made from tetra paks, ropes out of old cement bags, broaches from plastic wrappers and cushions made of old umbrellas filled with fine cut plastic wrappers and termacol. Before the festival also a recycled art competition had been launched for the community, and the artworks were now exhibited and admired by the public. Dewathang Primary School presented their Zero Waste efforts at their school through drawings and demonstrations, and the municipality gave an introduction to their work on waste in the community including the Waste Prevention and Management Act, the Waste Disposal Club at Jigme Namgyel Polytechnic educated the public on waste segregation and the importance of recycling and Mr. Shibu K. Nair, Mr. Dharmesh S. Shah and Ms. Shweta Narayan gave an introduction to various simple composting and bio-gas techniques which could be adopted by the community. SJI demonstrated a prototype of the solar drier that is manufactured in collaboration with the Centre for Appropriate Technology (CAT) at Jigme Namgyel Polytechnic, on how to reduce fruit and vegetable waste through drying as a form of preservation. Ready compost from local farmers was also exhibited as a way to demonstrate the benefits of making productive use of bio-degradable waste.

After the opening of the workshops and exhibitions, lunch was served to all participants and the winners of the recycled art competition were announced. The workshops continued until early afternoon, where children also engaged in environmental games including soccer playing with a football made out of plastics and other discarded materials. In the evening movies on waste and consumerism were screened for the public.

On the 5 October Bhutan Observer reported on the event: “Festival to address rural waste”. The Zero Waste Festival also coincided with the Global Day of Action Against Incinerators and a photo from the festival was added to the GAIA internationally circulated poster “Zero Waste is Possible”. Additionally, BBS made a story on the festival which has been screened on national TV at several occasions.

After the festival, the resource persons from India stayed on in Bhutan for another week, conducting Zero Waste trainings with Dewathang Primary School, JNP Waste Disposal Club, the District Environment Officer, Municipal Environment Officer, Inspectors in Dewathang and with the community members in Wooling. They also conducted interviews with sweepers and scrap dealers and visited the dump site and landfill in Dewathang and Samdrup Jongkhar respectively. In particular, the experts provided their invaluable input and advice throughout for improving the SJI Zero Waste Project and taking it further.

The next Zero Waste Festival in Wooling is planned for March/April 2013.

Input: Budgeted input: 207.000 Nu. Accumulated actual input: 109.847 Nu (as per 12/12/2012)

Output 2: Awareness raised on the importance and effects of minimizing waste, in particular the use of plastics, and of waste segregation at the household and institutional level. Output indicator: 2 Zero Waste Festivals held (1 in Dewathang, 1 in Wooling). → **Output target partly achieved.**

2:2. Recycled art/crafts activities with VASD

Activity: Recycled arts/crafts workshops with Voluntary Artist Studio Dewathang (VASD) were carried out during six occasions on a bi-weekly basis on Sundays between 9 am and 4 pm from July – September 2012. The Zero Waste Art Workshops were a continuation of the Youth Art Camp which was held in Dewathang in January 2012 led by the Voluntary Artist Studio of Thimphu (VAST), from which the Voluntary Artist Studio of Dewathang was established. The Zero Waste Art Workshops were held at Chokyi Gyatso Institute (Shedra) and conducted by SJI Zero Waste Artist and Intern Ms. Taylor Cass Stevensen (www.livedebris.org). Every session was attended by between 60-130 youth from Dewathang and surrounding villages. During all workshops healthy vegetarian meals prepared from local produce were served to all participants.

The Zero Waste Art Workshops were built up as educational classes using interactive and creative methods in order to create awareness and inspire the VASD students to come up with innovative solutions for dealing with the increasing problem of waste in the area. During the workshops the VASD students were taught various techniques on how to re-use discarded materials to make new, useful and decorative items, for example containers, lamp shades and brooms made from plastic bottles, boxes from used mobile phone vouchers and weaving techniques to make bracelets, belts and bags, using cut-out strips of wrappers and plastic bottles, use of old magazines for making paper bags and origami, left-over cloth pieces and wrappers to make flower-broaches, rope making from discarded cement bags, coasters from used tetra paks, cushion making from old umbrellas filled with finely cut plastic wrappers and termacol, among several other original crafts. Each session also included brief and simple introductory discussions pertaining to, for example, current waste management and recycling practices in the community, as well as creative writing and drawing exercises in an effort to raise awareness and engage the participants to reflect on how to better address waste issues in their community.



The last workshop was held on the 23 September 2012. On the 24 September Kuensel published an article on SJI's Zero Waste Art Workshops in Dewathang: "Putting 'bad' rubbish to good use". BBS also reported from the last Zero Waste Art workshop, which was screened on national TV.

In addition to the above, two Zero Waste Art Workshops have been held with the youth in Wooling village. The first in connection to the set up of the Zero Waste Committee at the end of August 2012, and the second during the training and monitoring visit conducted in the beginning of October while the Zero Waste experts from India were in Bhutan. Each session was attended by around 20 students.

Due to the time-period of the Zero Waste Artist's internship stretching from July – October 2012, all planned recycled art/crafts workshops were conducted during her stay, instead of on a bi-monthly basis. Due to this re-arrangement, some re-scheduling of the timeframe of the SJI Zero Waste Project's activities has been made, in particular with respect to the trainings of trainers and their work on conducting workshops at schools and other institutions, which has been postponed to the second half of the project cycle.

Ms. Taylor Cass Stevensen is coming back to Bhutan and SJI to follow-up and conduct additional workshops with the youth of Dewathang and Wooling in March/April 2013.

Input: Budgeted input: 54.000 Nu. Accumulated actual input: 38.490 Nu (as per 12/12/2012). Remaining funds will be used for Ms. Taylor Cass Stevensen's follow-up sessions with the youth of Dewathang and Wooling in March/April 2013.

Output 2: Awareness raised on the importance and effects of minimizing waste, in particular the use of plastics, and of waste segregation at the household and institutional level. Output indicator: 6 recycled art/crafts workshops with VASD conducted. → **Output target achieved.**

2:3. Conduct workshops at schools and other institutions

Activity: The Zero Waste Trainers will start conducting workshops at schools and other institutions in Dewathang and Wooling after they have been formally trained in the beginning of March 2013 by the Zero Waste experts of Thanal/GAIA in Trivandrum, Kerala, India. After the training, the Zero Waste Trainers will assist the Zero Waste Coordinator in developing the course material for training the institutions in the community, which in practice would need to be adapted to each institution and its specific situation and needs in line with the findings identified in the baseline studies that the trainers will conduct in January – February 2013.

The Zero Waste Trainer should start training the institutions upon completion of the course material and help out in the design, implementation and monitoring of Zero Waste strategies and practices at the respective institutions in the community during April – June 2013. The training and assistance in design, implementation and monitoring should be a continuous process, and the Zero Waste Trainer is required to take initiative to regularly visit the institutions and help out wherever needed, and also to make herself/himself available to Zero Waste Committee members upon request. The trainer is required to take thorough notes from the interventions at each institution and report to the SJI Zero Waste Coordinator on a monthly basis.

If the trainings of the institutions prove successful, the Zero Waste Trainer could be contracted for training new local trainers in surrounding communities during the coming project cycle, creating possibilities for also developing local Zero Waste capacity in other parts of Samdrup Jongkhar dzongkhag.

As already mentioned, the selection of the Zero Waste Trainer was delayed due to late formation of the Zero Waste Committees and due to re-scheduling of other project activities. Trainings of schools and other institutions have, however, to some extent already taken place as the SJI team has actively worked with the Municipality, Dewathang Primary School, JNP Waste Disposal Club, and Wooling community schools and institutions since the inception of the SJI Zero Waste Project. During their stay in Bhutan, the Zero Waste experts from India also conducted targeted trainings for the Municipality, Dewathang Primary School and the JNP Waste Disposal Club, as well as for the Wooling community.

Input: Budgeted input: 164.000 Nu. Actual accumulated input: 0 Nu (as per 12/12/2012).

Output 2: Awareness raised on the importance and effects of minimizing waste, in particular the use of plastics, and of waste segregation at the household and institutional level. Output indicator: 20 workshops held by the Zero Waste Trainers at schools and other institutions (in Dewathang, Wooling and other nearby villages). → **Output target not yet achieved, although trainings of schools and other institutions by the SJI team and Zero Waste experts have already to some extent taken place.**

3. Developing economic diversification opportunities

3.1. Promote scrap dealer's organizations and recyclables collection businesses

Activity: From 3-11 August 2013 the Zero Waste Coordinator together with the SJI Executive Director and SJI Zero Waste Artist and Intern conducted meetings with stakeholders in Thimphu to learn about the waste situation in Bhutan, and make necessary connections with donors, civil society organizations and businesses, in particular for identifying and promoting economic diversification opportunities within the fields of recycling and recycled handicraft.

Meetings were held with Civil Society Organization Fund Facility (CSOFF), JICA, Bhutan Trust Fund for Environmental Conservation, Royal Society for the Protection of Nature (RSPN), National Environment Commission, Thimphu Thromde, Druk Waste Collection, Greener Way, Early Learning Centre including Design for Change, Voluntary Artist Studio Thimphu (VAST), and Bhutan Observer. A field visit to the Memelakha landfill was also carried out.

During the meetings the problems and potential solutions of the waste situation in Bhutan were discussed, and possible areas of collaboration on responsible and sustainable waste management were identified both with respect to donors, Thimphu Thromde, Druk Waste Collection, Greener Way, VAST and Bhutan Observer.

As a result of the stakeholder meetings in Thimphu, Senior Environment Officers from Thimphu Thromde have requested to visit SJI for exposure and training on Zero Waste and will also be joining the SJI team for the training in Kerala in March 2013, Druk Waste Collection came to participate in the SJI Zero Waste Festival in Dewathang, connections for future collaboration regarding Greener Way's planned expansion of their scrap dealing/recyclables collection business to Samdrup Jongkhar were established, continued collaborations with VAST on recycled art/handicraft were re-affirmed and Bhutan Observer published an article on the Zero Waste Festival. The Zero Waste Coordinator also connected with several shop owners in Thimphu, who would potentially be interested in selling recycled handicraft from Samdrup Jongkhar in their stores at a later stage.

Regarding promotion of local scrap dealers and recyclables collection businesses, SJI overall tries to encourage waste segregation and recycling at all levels in Dewathang and Wooling communities by connecting stakeholders through the Zero Waste Committees and through various awareness raising activities and direct involvement.

Among other things, SJI has been instrumental in assisting in the set up of new collaborations among several institutions and also at household level in Dewathang, promoting waste segregation and recycling of non-biodegradable as well as bio-degradable waste, thereby helping to develop the local market for scrap dealers, recyclables collectors and farmers.

In Wooling, SJI has actively promoted waste segregation and recycling of non-biodegradable waste, and has offered a material recovery facility to be set up for community recyclables collection, which could help in developing new economic opportunities while at the same time introducing responsible and sustainable waste management practices in the community.

As of now, no scrap dealer's organizations have been set up in Dewathang and Wooling, and it also seems unlikely to happen given the current setting. In Dewathang community there are only two scrap dealers, and in Wooling none at this stage.

Input: Budgeted input: 45.000 Nu. Accumulated actual input: 44.896 Nu (as per 12/12/2012).

Output: Development of small scale recycling, re-use and up-cycling businesses. Output indicators: i) Scrap dealer's organizations established in Dewathang and Wooling, ii) Recyclables collection businesses set up in Dewathang and Wooling. → **Output target partly achieved.**

3:2. Set up and train self-help groups engaged in eco-friendly handicraft

Activity: In Dewathang, Ms. Taylor Cass Stevensen trained three women on separate occasions during her internship period. The women were trained in making bags, boxes, brooches and other jewellery from used truck inner tubes, plastic bottles, wrappers and used phone vouchers. In addition, about 20 school teachers in Dewathang were trained in a few re-use techniques. They had approached SJI with an aim to learn techniques that they could use to teach their students. During the workshop, they in particular expressed interest in making cleaning supplies, such as brushes and brooms, from re-used materials that could be used to clean the campus.

In connection to the first two field visits to Wooling, trainings on eco-friendly handicraft were given to interested women and a few men. The first training on 30 August 2013 consisted of around ten people and lasted for about five hours. The second workshop on the 4 October 2013 was a whole day event and included about 20 women and a few men. The women and men were trained in a number of techniques that can be used to make items such as flower brooches, pin cushions, pillows, bowls, cup holders, bags, baskets and jewelry. Because these workshops were geared toward utilizing problematic, non-recyclable waste, wrappers and tetra pak juice boxes were primarily used. Other materials included plastic bottles, discarded wires, broken umbrella parts, small fabric scraps and paper.



At this stage, the women and men in Dewathang and Wooling have not organized themselves into formal self-help groups. The formation of the group does also not necessarily have to be set up as a self-help group, but should rather develop informally and organically, at least for the time being.

Ms. Taylor Cass Stevensen is coming back to Bhutan in March/April 2013 to follow-up and conduct additional workshops with the women and men in Dewathang and Wooling who are interested in continuing developing their skills in eco-friendly handicraft.

Input: Budgeted input: 30.000 Nu. Accumulated actual input: 3.145 Nu (as per 12/12/2012).

Output: Development of small scale recycling, re-use and up-cycling businesses. Output indicator: 2 self-help groups created and trained in eco-friendly handicraft (1 in Dewathang, 1 in Wooling). → **Output target partly achieved.**

3:3. Prepare for set up of Zero Waste Café

Activity: Early next year, the Samdrup Jongkhar Initiative will move into an office in Dewathang, and one of the rooms in the office facility could potentially be used as an establishment for the Zero Waste Café. The idea is that the office would be set up as a community centre, including a library, cinema

clubs and other forums for youth activity, creativity and development, in which the Zero Waste Café could play a vital role. Funds and local youth for running the Zero Waste Café have, however, not yet been identified.

Inputs: Budgeted input: 0 Nu. Accumulated actual input: 0 Nu.

Outputs: Development of small scale recycling, re-use and up-cycling businesses. Output indicator: Work initiated on identifying facility, funds, local youth for set up of a Zero Waste Café in Dewathang. → **Output target partly fulfilled.**

OUTCOMES

The SJI Zero Waste Project recognizes the importance of community behavioural change in achieving the immediate (project) and overall impacts and objectives. Hence, an effort already at this stage is made to relate the above accomplishments to the project outcomes.

Community members actively participating in Zero Waste Committee meetings and taking initiatives to implement responsible and sustainable waste management practices in Dewathang and Wooling pilot villages.

Dewathang

During the Zero Waste Committee meeting in Dewathang, stakeholders working on waste in the community for the first time came together to discuss measures for making the current waste management system more efficient and sustainable. The members actively participated in the discussions, raised their concerns, exchanged ideas and came up with potential solutions, such as alternative approaches to current dumping practices involving having two dumps instead of one; one for non-biodegradable waste and one for bio-degradable waste combined with household segregation and municipal segregation stations. Another alternative to the dump site suggested by the Municipality was the establishment of a sanitary landfill. More dustbins were requested, and a new scrap dealer was identified for exploration of new market opportunities for recyclables. Several institutions also proposed the introduction of composts at their respective localities for proper management of their bio-degradable waste.

Although being an active and dynamic committee, SJI is in fact currently initiating and leading the Zero Waste Committee meetings in Dewathang, indicating a potential lack of ownership and raising concerns about future long-term sustainability of the committee. During the second half of the project cycle, measures will be taken to encourage local ownership (e.g. appointing the local Zero Waste Trainer as the Chair of the meetings) which could increase the probability of establishing a more sustainable institution. A general broad basis of local participation and interest in addressing the issue of waste in Dewathang, however, signals that ownership is already there but needs to be further strengthened and unified.

Wooling

During the set up of the Zero Waste Committee in Wooling, a lot of interesting issues on waste were raised, and many good solutions suggested. Currently the community members were burning their waste, but were interested in looking into other alternatives, such as recycling of non-biodegradables. One committee member suggested that the community should establish a storage space for non-biodegradable waste, where recyclables could be collected and later sold to by-passing scrap dealers. It was also mentioned that since Wooling is a rural village, bio-degradable waste is commonly directly fed to the cows or thrown in the fields, hence not being an issue of concern in the community.

After the establishment of the Zero Waste Committee, the members have among other things encouraged the community to stop burning their waste, and have together with the SJI team been instrumental in carrying out a “Zero Waste Tshechu” during 10-14 December 2012, involving Zero Waste offerings (non-packaged items) and waste segregation at source. When SJI arrived in Wooling to help preparing for the Tshechu, the Zero Waste Committee had already identified the places where the segregation centers would be located. SJI provided plastic buckets for the centers, but the categories of the waste to be segregated and the signage were designed by Wooling community members. Each segregation center consisted of three buckets. One for pet bottles and tetra paks, another for papers and plastics and the third for glass bottles. Bio-degradable waste was collected in buckets in the community kitchen area for cow-feed and field manure. Offerings at the temple during the Tshechu consisted mostly of local produce including fruits, home prepared traditional biscuits and cakes. This can be further verified from the amount of waste generated at the segregation centers. Drinks containers such as pet bottles and tetra paks were surprisingly minimal given the large number of 500 people who came on the first day. Wooling elders and leaders mentioned repeatedly the marked reduction in the littering in the courtyard. On the first day itself, residents of the houses close to the temple were expressing their delight at the fact that the post Tshechu littering of 2012 would be much less than in previous years.

The SJI has visited Wooling four times in 2012 including the preparatory visit to study the waste situation in the community. It is obvious that the Zero Waste Committee has taken true ownership in introducing responsible and sustainable waste management practices in their community, and thoroughly integrated the knowledge that has been shared by the visiting Zero Waste experts and SJI.

Community members exchanging unsustainable waste management practices for more sustainable including waste minimization, waste segregation and re-use of non-biodegradable and bio-degradable waste at household and institutional level in Dewathang and Wooling pilot villages.

Dewathang

A direct effect from the Zero Waste Festival in Dewathang was the increase in the number of members in the JNP Waste Disposal Club. Previously the club consisted of 16 members including one lecturer. Just after the festival the number of members increased to 29 including five lecturers and five women. Previously no women had been involved in the club. The Jigme Namgyel Polytechnic students have also started segregating their waste at their hostel, which has facilitated the work of the JNP Waste Disposal Club considerably. In addition, as recognition of the important work the club is

carrying out at the campus, the group received 7,000 Nu for maintenance of their carts and other equipment from the JNP management. It was the first time the JNP Waste Disposal Club was provided a grant from the Institute.

Another effect from the Zero Waste Festival and the subsequent training with the visiting Zero Waste experts from India is the commitment made by Dewathang Primary School to become a “Zero Waste School”. The implementation of the project will start from March 2013 and involve extensive waste segregation of non-biodegradable waste for storage in a material recovery facility. The waste material will be then be either sold to scrap dealers or used for recycled art/crafts educational activities. Biodegradable waste will be used for making compost, which will be distributed in the planned organic garden that the school will set up by the beginning of next semester. Other activities involve implementation of a material use policy and improved toilet sanitation through rainwater harvesting.

An outcome of the recycled art/crafts workshops with VASD are the visible indications of continuous creative crafting with recycled materials among students in Dewathang and surrounding areas. For example, several Zero Waste costumes using some of the techniques taught during the VASD workshops could be seen on stage during the Cultural Nights in Garpawong Middle Secondary School, and also during the Annual Variety Show at Dewathang Primary School.

After discussions with SJI, the Municipality has decided to introduce waste segregation stations in Dewathang, with three large bins placed together at several different localities, in order to reduce the pressure on the dump site and increase the extent of recycling of non-biodegradable and biodegradable waste in the community. Preliminary the waste segregation stations will be put in place during 2013. During the first half of 2013 the Municipality has also planned to conduct trainings on composting, bio-gas and recycled/local products, and has asked SJI for assistance in developing these trainings and identifying suitable resource persons.

Several very encouraging initiatives have been taken in Dewathang to exchange unsustainable waste management practices for more sustainable, in particular at the institutional level. At the household level the situation is, however, more difficult to improve as long as the municipal waste segregation stations have not been set up, and storage of waste outside of the people’s houses is not allowed according to the Waste Prevention and Management Act.

Wooling

In Wooling, community leaders and elders point out that burning of waste has become a rarity after the SJI team has explained about the hazards of burning waste on health and environment and how it contributes to climate change.

As a result, some Wooling residents have started storing their non-biodegradable waste in bags after being advised against the ills of burning. But an alternative is important since the waste will pile up and residents will have to find a way to dispose the waste. The nearest landfill is in Samdrup Jongkhar, which is 65 kilometres away from Wooling. Upon request from the villagers, SJI has offered to assist in setting up a material recovery facility for storage of non-biodegradable waste.

Community members creating new economic opportunities by setting up and engaging in scrap dealing and recyclables collection, composting as well as eco-friendly handicraft businesses in Dewathang and Wooling pilot villages.

Dewathang

In Dewathang, there already exists around 6-7 recyclables collectors for non-biodegradable waste, one of them being the JNP Waste Disposal Club, collecting waste and recyclables from the campus area. At the same time Dewathang Primary School students were collecting waste from the community on a weekly basis, although no segregation took place. SJI encouraged Dewathang Primary School to start segregating their plastic bottles and give them to the JNP Waste Disposal Club in order to reduce the pressure on the dump site and improve the business opportunities for the club members. Since a couple of months back, the JNP Waste Disposal Club is now collecting the plastic bottles from Dewathang Primary School on a weekly basis and selling them to local scrap dealers. During the Zero Waste Committee meeting another scrap dealer in the community, dealing in plastic bottles, was identified, with whom the JNP Waste Disposal Club might initiate a new collaboration.

SJI is also working on exploring the potential for businesses for bio-degradable waste in Dewathang, such as selling kitchen waste to farmers as cow/pig foods, and making compost for sales.

Regarding eco-friendly handicraft it took a long time to identify interested trainees in Dewathang, since many people initially said that they did not have time for crafting. Once SJIs presence in the community began to grow, however, more people approached SJI who were interested in learning recycled craft techniques. So far, two of the three women who have been trained have expressed interest in selling their work in the future, though the Zero Waste Artist and Intern did not have sufficient time to follow up with them for additional training. Moreover, a number of other women expressed interest in being trained, though not for the same reason. The two local sweepers were also interested in learning re-use techniques for making cleaning supplies. While it is hard at this point to assess the potential for craft cooperatives in Dewthang that could market their products, there is at least significant interest in re-use crafting for local and personal use.

Wooling

While Wooling community members are ready to embrace waste segregation, the lack of a scrap dealer in their community is a hindrance. The only recycling currently taking place in Wooling is when the villagers store beer bottles to sell them in Samdrup Jongkhar. They have asked SJI for a material recovery facility to be set up, which could store non-recyclables to be sold in bulk to bypassing scrap dealers, thereby taking better advantage of the economic opportunities from waste while at the same time introducing more sustainable waste management practices in the community.

When trainings on eco-friendly handicraft were conducted, the women and men in Wooling were very interested in learning, and have requested SJI to arrange for more workshops on recycled crafts. A number of them also expressed interest in marketing their works if opportunities were available. The current skill level of the women is sufficient for lasting local re-use of materials, but not yet to a level required for marketing the products. Continued work with the women in basic skills such as sewing and cutting would be necessary in order to make the items sellable.

One possible route for getting them accustomed to experimenting with recycled materials on their own might be to adapt plastic waste re-use into craft techniques that they are already familiar with, such as weaving. The most effective means of initiating such a project would be to train a Zero Waste Artist in Bhutanese weaving, and have the artist recommend strategies for applying re-used material to weaving techniques. Such products would potentially be highly marketable and would thereby give the women the confidence to practice other techniques and expand their saleable re-use craftwork to other products.

FINANCIAL OVERVIEW

Budgeted total input: 806.400 Nu. Accumulated actual input: 339.406 Nu (as per 12/12/2012).

Minor adjustments between budget lines are requested due to a 40 percent unforeseen price increase in the insurance for the Zero Waste Coordinator. The extra cost for the insurance has currently been deducted from the overhead budget. A request is hence made to allocate 10 percent of the monitoring budget to the overhead budget in order to partly adjust for this unexpected cost, and better align with actual project expenditures.

Insurance Zero Waste Coordinator	July 2012 – June 2013		46.000 Nu	
Overhead	July 2012 – June 2013		67.200 Nu	+ 10% → 73.920 Nu
Monitoring	July 2012 – June 2013		67.200 Nu	- 10% → 60.480 Nu

OVERALL ASSESSMENT

The SJI Zero Waste Project is on track both with respect to activities, inputs and outputs. Approximately half of the activities stated in the project proposal have been carried out, and a little less than half of the funds dedicated to the project have been utilized. Equally, half of the output targets have been achieved and some outcome behavioural change in Dewathang and Wooling communities is already clearly noticeable. During the second half of the project cycle, started project activities will be deepened and the remaining activities carried out. The overall challenge and focus of the second half of the project cycle should be put on trying to ensure sustainability of the SJI Zero Waste Project and to plan for how the project should be taken forward in the second project year.

APPENDICES

- 1) Revised SJI Zero Waste Concept Note
- 2) Revised SJI Zero Waste Detailed Project Proposal with updated Outcomes
- 3) ToRs Zero Waste Committee
- 4) ToRs Zero Waste Trainer
- 5) ToRs SJI Zero Waste Interns
- 6) Baseline research questionnaire
- 7) Bhutan Observer article: “Festival to address rural waste” (5 October 2012)
- 8) Kuensel article: “Putting ‘bad’ rubbish to good use” (24 September 2012)
- 9) BBS story from Zero Waste Festival in Dewathang: <http://www.bbs.bt/news/?p=20226>
- 10) GAIA Global Day of Action Against Incinerators poster: “Zero Waste is Possible”
- 11) Reports from two Wooling field visits (August, October 2012)
- 12) Note from the SJI ED from the Zero Waste Tshechu in Wooling: “Zero Waste Letter from Wooling” (11 December 2012)
- 13) Rotary newsletter article by SJI Zero Waste Intern
- 14) Budget and actual expenditures