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ZERO WASTE STEP TO CIRCULAR ECONOMY

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Integrated Resource Recovery Centers (IRRC)

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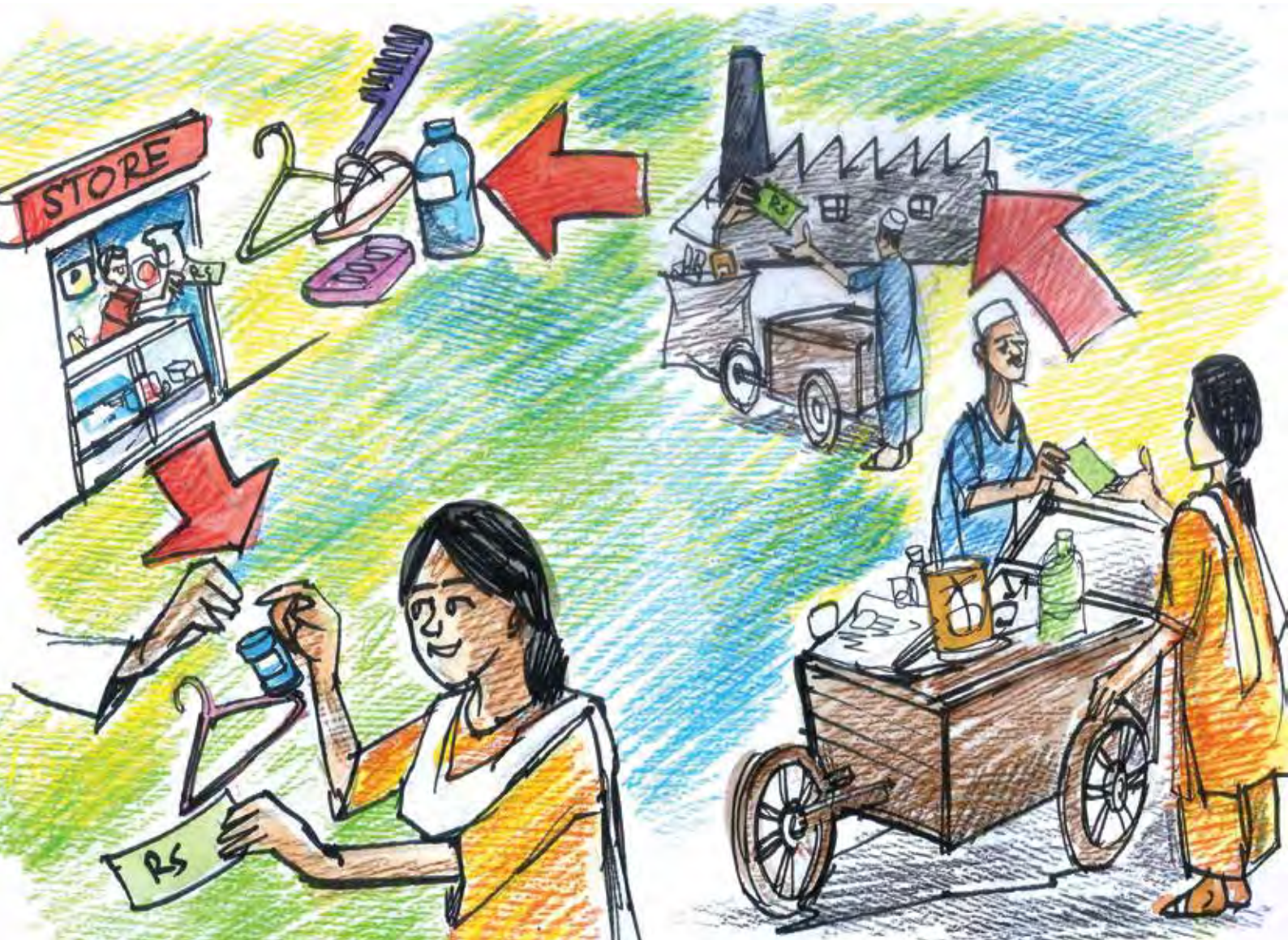
PREFACE

Although circular economy is not a new concept in the developed world, which has largely moved away from the linear business model of take, make and dispose; in Pakistan people still mainly adhere to this concept. We are at the primitive stage of the circular economy concept whereby we are only inclined towards melting plastic products to remake similar or different plastic products. Whereas, the wide scope of circular economy apart from just recycling the plastic, can enable us to create new opportunities of growth and better utilization of our existing resources. Circular economy could be the missing cog in implementation of solid waste management because on one hand it will not only reduce waste, it will also drive greater resource productivity, deliver a more competitive economy, position Pakistan to better address emerging resource security or scarcity issues in the future and help society reduce the environmental impacts of our production and consumption not only within the state but around the globe as well.



Since its inception way back in 2000, as a non-government organization, Dr Akhtar Hameed Khan Memorial Trust has been endeavoring to introduce and implement solid waste management related practices and research initiatives in the country and its specialized Integrated Recovery Resource Center in leaps and bounce could be deemed as one of the success stories among many, the organization has achieved so far. Integrated Recovery Resource Centre is a decentralized, pro-poor and locally appropriate model of sustainable municipal solid waste management (SMSWM) that is based on the 3R (reduce, reuse, recycle) approach. The IRRC receives segregated municipal solid waste and converts 80-90% of the waste into profitable waste products such as organic compost, and recyclables through simple, low-cost, and non-mechanized processes. The IRRC model is inclined towards the practice of making the people at the grassroots level understand what opportunities the waste sector and recycling industry could present to them.

In Pakistan generally municipalities used to lift garbage from cities and settled towns, the work which has now been devised to some international companies, which ironically are charging a much higher amount of money for the work which our municipalities used to perform at far lesser amount. Although management of solid waste is a humanitarian issue but, international companies have turned it into a business. So when it has become a business, then why doesn't our government pay attention to this serious issue and manage it through a centralized process by establishing IRRCs at city and town levels. By using the principles of circular economy waste would not only be beneficial for those generating it but it could save our national exchequer and also become a source of producing organic fertilizer for crops which on one hand could not only be an income generating opportunity for the government but will also protect our soil from the harms of chemical fertilizer. And for this purpose IRRCs could become ideal hub for utilizing circular economy practices.
A study by the Tearfund, an international NGO which has worked in Pakistan since 1973 conducted a peer-reviewed cost-benefit analysis of the existing IRRC run by Dr Akhtar Hameed Khan Memorial Trust in Sector G-15 in Islamabad, which found that, for every $1 invested by the donors, AHKMT's IRRC delivers $10 in economic, health and environmental benefits. The study has found that 99.6% of high community households demanded implementation of the project in letter and spirit and even expressed their willingness to pay a small fee for utilizing the service in the longer run.

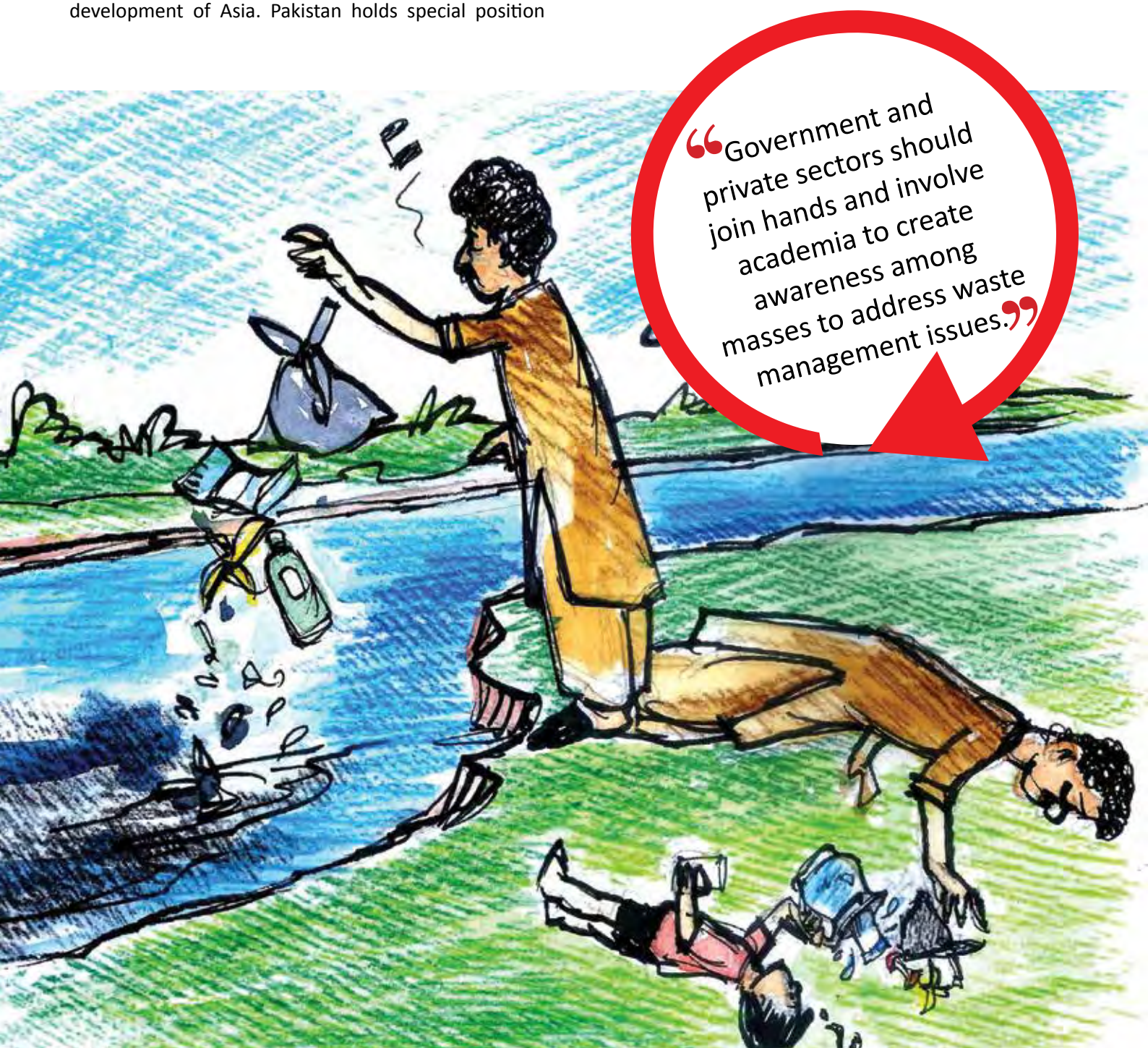
Now it is dire need of the hour that new government in Pakistan which is also endeavoring to make 'Pakistan a clean and green' state, to implement model of circular economy in the country and mainstream solid waste management through centralized Integrated Recovery Resource Centers which could become a hub of circular economy where government, local bodies, parliamentarians, private sector, non-governmental organizations, investors and housing societies should join hands.

The dream could be realized through establishment of waste management institutes in cities which house around100,000 populace where circular economy can play dividends in achieving the desired results. By providing jobs to the local community, the government on one hand could not only live up to its promise of job generation but also relieve these areas of their waste problem, because IRRCs are designed to be run as businesses, and therefore at a minimum their objective is to achieve revenue-cost balance and under official patronage the target could be achieved. A circular model of waste management in cities will facilitate diversion of collected waste from disposal sites to recycling practices. Waste has always been considered to be a nuisance in most cities and societies, forgetting that these wastes themselves may be turned into gold or something much more valuable that will boost our economy.

WASTE MISMANAGEMENT CAUSE OF WATER CONTAMINATION & RISING POVERTY

By Sumaira Gul

Asia is the largest continent in the world. It has a variety of natural resources like dense forests, vast reserves of minerals and natural gas, diverse types of soil, water as well as a variety of food crops. These natural resources have helped in the economic development of Asia. Pakistan holds special position with distinctive lush green hills, rivers and snow peaked mountains in the region. However, despite having rich resources people in Pakistan, especially those living in northern areas and along coastal cities are facing extreme environmental problems due to varied reasons.



People in the country particularly northern areas, are facing problems ranging from water contamination to solid waste management and rising ratio of poverty. Gilgit city, located along the Pak-China border, generates 42 tons of waste, which is dumped into the river formally or non-formally resulting in severe water contamination of Gilgit River, a tributary of Indus River. As a result, trout fish one of the major sources of income and food source for the locals is going extinct and with each passing day the ratio is rising. Proper solid waste management system in the area can avert this natural disaster to go to alarming proportion. Although 27 entities are involved in recycling business in the area and annually they transport around 1,200 tons of recyclable material to major cities of the country thus earning good money, but they lack official patronage and it is a proven fact that without official backing, it becomes quite hard for the private sector to survive and succeed.

The situation of Chitral, a beautiful valley in northern areas of the country is no different where a population of around 200,000 people generates around 13 tons of waste on daily basis. But around 50 percent of it is directly or indirectly dumped into Kunar River, a tributary of River Kabul, one of the major tributaries of River Indus and the pollution in the tributaries directly affects Indus River thus having serious implications for hundreds of thousands of people relying on it for drinking water or cultivation purposes. The Indus River provides key water resources for Pakistan's economy – especially the breadbasket of Punjab province, which accounts for most of the nation's agricultural production, and Sindh. Losing such a precious source of water adds to the economic woes of the populace living along the riverbank.

Kashmir and Swat valleys, considered heavens on earth are also gripped by mismanagement of solid waste and water contamination. Mingora, Swat, houses a population of 173,868 people according to local data, and they generate around 45.5 tons of waste daily. Although local administration collects 50% of the waste, but instead of properly disposing it off, they dump it into the river directly. Whereas the solid waste of Swat city is directly dumped into Swat River near Fiza Ghat while several educational institutions as well as local seminaries have their sanitation lines dump their sewage directly into river, contaminating it seriously. People of area living along the riverbanks and those visiting the picturesque valley of Swat deem this water to be safe, but they are wrong and resultantly suffer from waterborne diseases like gastroenteritis, hepatitis etc. thus hampering their earnings and adding to the poverty ratio in the area.

Moreover, Muzaffarabad, the capital of Azad Jammu and Kashmir with urban tendency having a population of around 100,000 people generates about 40 tons of solid waste on daily basis. The natural calamity of 2005 earthquake also forced hundreds of thousands of refugees to migrate to the city thus putting extra pressure on waste generation of the city. But the catch situation is that the area lacks a proper waste management system as from ordinary citizens to government and non-government entities, all dump their garbage into Neelum-Jhelum River. The river water carries this dumped garbage into Mangla Dam decreasing its storage capacity which results into decreasing electricity generation from this water reservoir thus harming our national economy. However, considering the enormity of the situation, the AJK government allocated a piece of land near the river in Shahdara area for a landfill site where process of digging trenches is underway. Although, AJK government allocated budget share for solid waste management in Neelum-Jhelum Project, but so far no project has been initiated on ground.

Coming down from mountainous regions of northern areas, Khyber Pakhtunkhwa and Azad Jammu and Kashmir there lies, the twin cities of Islamabad and Rawalpindi having an approximate population of 3.2 million people. They generate around 1,600 tons of solid waste daily. The local authorities through Waste Management Company in Rawalpindi and Municipal Corporation of Islamabad collect and dispose around 50-60% of waste. Rawalpindi Solid Waste Management purchased 600-kanal land at Losar in 2003 to dump garbage, but apart from shifting of garbage through Liaquat Bagh Transfer station, a massive quantity of the garbage is dumped into streams, smaller drains and main Nullah Leh and Korang Nullah passing through the twin cities.

Nullah Leh starts from the IJP Road in Islamabad at the administrative boundary between the twin cities of Rawalpindi and Islamabad. Apart from flow from Islamabad area, 11 main drains of Rawalpindi City also contribute to Nullah Leh. The Nulla Leh combined with its tributaries such as Saidpur Kasi, Kanitwali, Badarwali Kasi and Tenawali Kasi, originating from Margala Hills enters Rawalpindi city from Islamabad's area at IJ Principal Road and Khayaban-e- Sir Syed. The additional tributaries including Nikki Leh, Dhoke Hassu Nullah, Dhoke Ellahi Bakhash and PAF Colony Nullah join the main stream of Nullah Leh within Rawalpindi City. On the other hand Korang originates from Murree Hills and flows towards Islamabad. Korang Stream along with some other small streams coming from Margalla Hills forms the artificial Rawal Lake in Islamabad. Korang River is the outlet stream of Rawal Dam. This

stream crosses Islamabad Expressway between Korang Town and Judicial Colony. The terrain of this stream is eye catching and the Loi Bher Wildlife Safari Park is located on the beautiful terrain of the left bank of Korang Stream. Onward, this stream joins Soan River before reaching the Grand Trunk Road. Just after this point, Nullah Leh joins Soan River. Some decades ago Nullah Leh and Korang were so clean that fish and living organisms were abundant in them but serious dumping of garbage and industrial waste into them have spoiled their beauty and turned them into drainage systems of the twin cities. People having the social resources have migrated to uptown areas to avert the dangers of contaminated water and foul smell emanating from these tributaries.

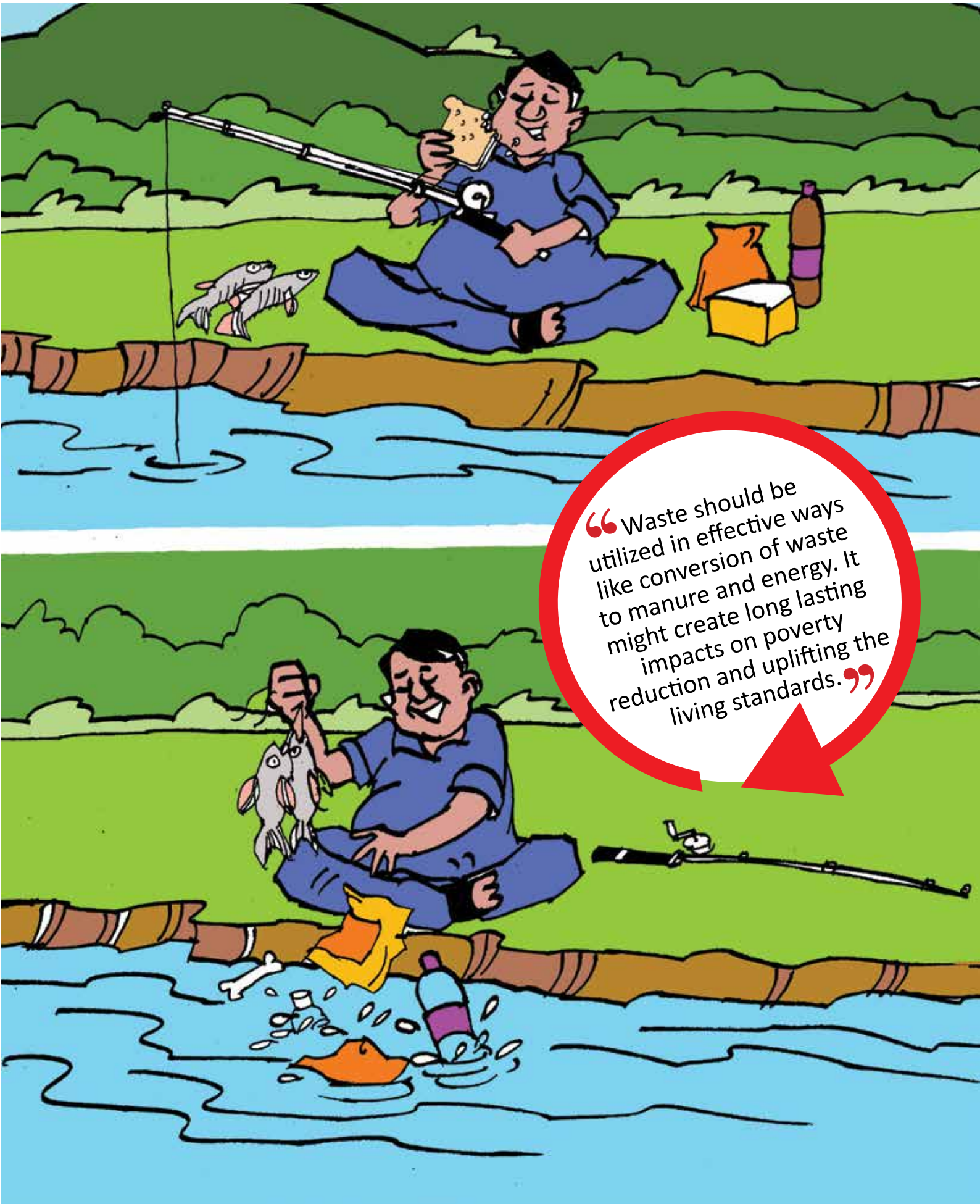
The once sweet and potable water of Soan River has been polluted hence it has become unfit for irrigation purposes but people still use it as they have no alternative source thus resulting in the devastation of food and crop cultivation in the Potohar region making lots of families lose their precious agricultural land and losing their source of income.

Punjab is the land of rivers and fertility and its folktales are famous according to the rivers. But the situation in this beautiful province of Pakistan has also reached critical situation. Lahore, the metropolitan city claims to be the cleanest city of the country. However, situation of Ravi, passing along the city is alarming. It is alarming that the use of Ravi waters for irrigation has been found to be severely harmful for the soil as well as crops. Various studies highlight the accumulation of harmful heavy metals in crops irrigated with Ravi waters. Ravi is cruelly affected by the indiscriminate dumping of untreated municipal and industrial effluents. With extremely low flows in the winter, the river turns into a dirty drain due to the discharge of municipal sewage from Lahore city as well as industrial flows from industrial clusters at various locations like Kala Shah Kaku-Lahore Sheikuhpura Road, Kot Lakhpat Industrial Estate and Multan Road. This has resulted in increased incidence of diseases like diarrhea, abdominal infections and skin disorders. During low flow or zero flow from India the river is literally reduced to a drain. In rainy seasons flash-floods hit Shahdara every year. On the other hand south Punjab is affected by contamination of Indus River as well as floods. Due to frequent floods, Muzaffargarh and Rajanpur remain most poor districts of Pakistan.

Natural and human interventions have posed serious threats to the sustainability and development of the coastal environment of the industrial city and economic hub of Karachi, which has a coastline extending up to about 30 km. The city, with more than 18 million people, generates around 472 million gallons per day of municipal and industrial wastewater. Out of which, about 80% is being discharged untreated into the Arabian Sea. The problem is more aggravated by oil spills from cargo ships, and oil tankers in the Harbor Area whereas sea shores have been turned into dumping grounds. It has almost destroyed the fishery industry. Most of the fishers are forced to work in deep sea and sometime they mistakenly cross the limits and enter into boundaries of other states and get caught. The overall environmental impacts of improper waste management lead to illiteracy and poverty. The islands of Baba and Bhith are also putting their sewage directly into sea.

After thoroughly looking into the areas from peaks of northern areas to coastal city of Karachi, it comes to mind that we lack a proper sewage system and it is recommended that a proper waste management system from primary to secondary levels is established. Each stakeholder should contribute to this system efficiently. Government and private sectors should join hands and involve academia to create awareness among masses to address this issue. There is dire need of adoption of integrated eco-friendly approaches, to make our water resources nature friendly and create more economic opportunities of the people. Instead of dumping waste into water channels, it could be managed well through adoption of circular economy. In order to solve the problem it is imperative to shift from the conventional end-of-the-pipe waste management system (focused merely on collection and disposal) towards a resource management approach. Integrated Resource Recovery Centers (IRRCs) are facilities that enable cities to turn waste into resources through composting, recycling and bio digestion, and diverting municipal solid waste from landfills or open dump sites into something useful. IRRCs typically process 80-90% of waste streams, in proximity to the source of generation, and in a decentralized manner. Plants with a capacity to process between 2 and 10 tons of municipal solid waste per day have been established in cities in Cambodia, Sri Lanka and Vietnam and, now in Pakistan. This system through adoption of circular economy can create long lasting impacts on poverty reduction and uplifting the living standards of common people. Establishment of a proper waste management system from primary to secondary levels in these areas is recommended. Awareness should be spread among stakeholders and the community should be sensitized on the important issue. Integrated eco-friendly approaches should be adopted. Waste should be utilized in effective ways like conversion of waste to manure and energy. It might create long lasting impacts

on poverty reduction and uplifting the living standards. It can also help preserve water resources of Pakistan from getting contaminated and also create sources of income to reduce burden on economy. The issue needs to be highlighted judiciously at all forums.

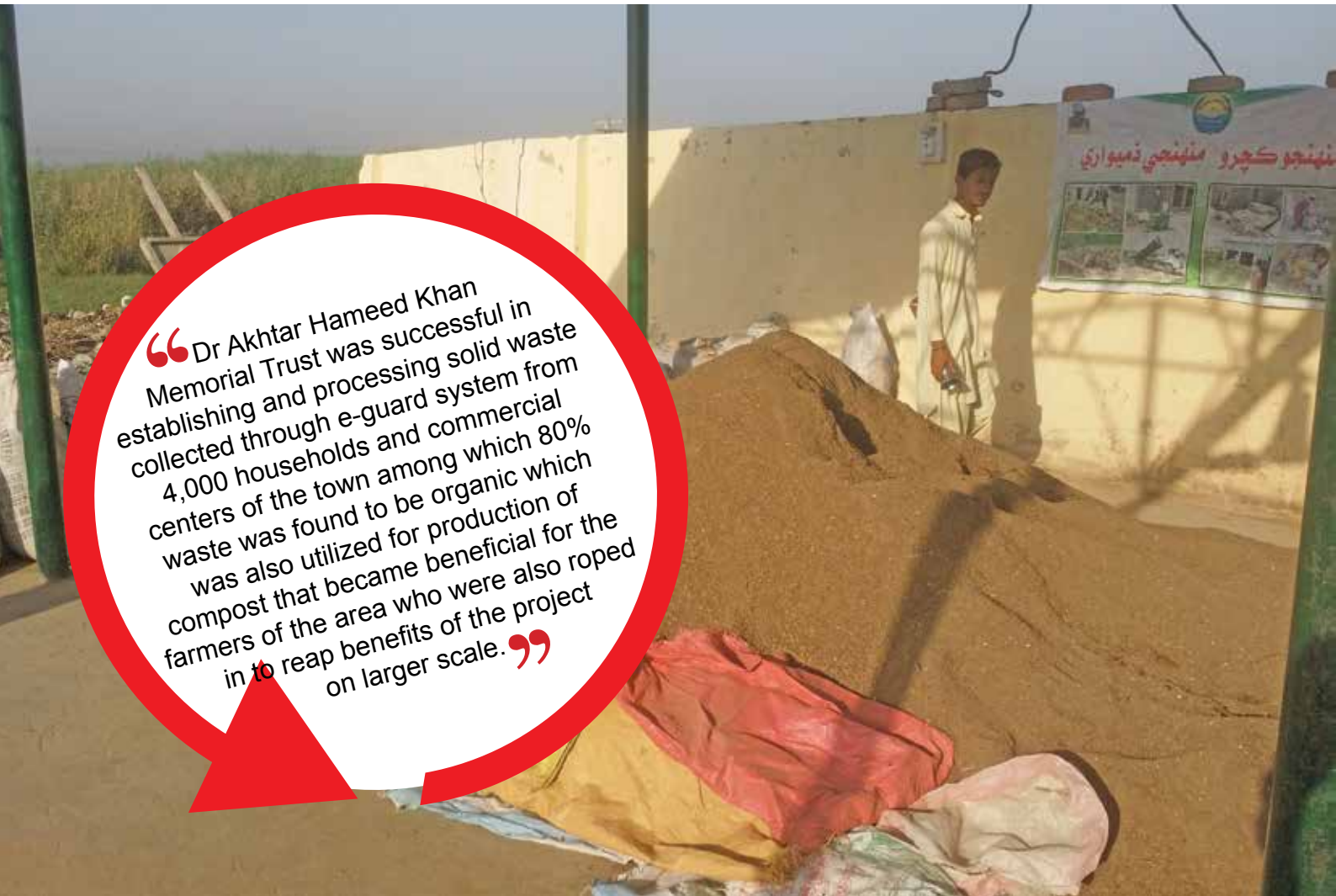


TOWN COMMITTEE SAKRAND TAKES CHARGE OF MANAGING WASTE

Today we are living in the world of scientific inventions which have definitely changed the life styles of people living in both urban and rural areas completely. Although the new developments on technological front has made the life of a common man a bit easier, but we can't hide away from the fact we are facing numerous problems in our day-to-day life also due to these advancements, as they have harmed us in numerous ways. These developments have forced the common man to change his life style to some extent and use and discard several things which add to the amount of waste created around the world these days. Several studies have identified that in Pakistan about 48 million tons of solid waste is generated every year which is a very alarming factor.

Our urban as well as rural areas today are facing numerous problems just because we lack a proper waste management infrastructure. Most of the solid waste is burned, buried or dumped on vacant plots, which is direct threat to welfare of the community. Problems associated with Solid waste management are complex because of the quantity and diversity of the nature of waste and financial limitations on public services in our urban and rural centers. Apart from the addressing the issues related to impacts of solid waste management on land, the problem associated to air and water also do need some attention.

After reaping the benefits of solid waste management system in Islamabad, and keeping in view the objective



of managing the solid waste management issues of rural areas, Dr Akhter Hameed Khan Memorial Trust (AHKMT) wrote a letter to different town committees in September 2016 apprising them of the benefits of solid waste management through a decentralized recycling and composting facility, which is built and operated at low costs by using limited mechanical technology, ensuring low operational costs and minimal equipment breakdowns. Every town committee was asked if they wanted to utilize this facility for proper solid waste management in their respective areas then a waste treatment plant can be developed and handed over to non-governmental organizations or other private local companies for proper disposal of solid waste.

Dr Akhtar Hameed Khan Memorial Trust's call was answered by Sakrand Town Committee, which invited AHKMT team for technical assistance. Sakrand Town is a Taluka of the district Shaheed Benazirabad (erstwhile Nawabshah), about 18 kilometers from the old Nawabshah city. Its population is approximately 31,630. Dr Akhtar Hameed Khan Memorial Trust signed a Memorandum of Understanding (MoU) with Sakrand Town Committee for bringing improvement in solid waste management of Sakrand town. The main objective of the agreement was to establish a proper waste collection system at the household level and setting up a waste processing unit in shape of Integrated Resource Recovery Centre. The agreement was signed in January 2017 and work on the project began in February 2017 where sanitary workers were trained for the Integrated Resource Recovery Centre initiative. After selection of the land for Integrated Resource Recovery Centre, work on the construction of boundary wall, bathroom, shelter and segregation platform were completed.

In Sakrand Town, IRRC was replicated and initially two wards were selected for the process, but later the Centre was replicated in five wards. And after the success of the project, now the services of waste collection are provided in 15 wards. The situation became fruitful because of proper coordination between lane departments and well-panned strategies including a sanitation week, awareness campaign, painting contest for students, through training workshops and hygiene campaigns.

Dr Akhtar Hameed Khan Memorial Trust Supervisor Bilawal Khan gave brief explanation to the workers and other training participants about personal hygiene. Bilawal taught them that during work or before work and after work how to take care of themselves and gave them some points for maintaining personal hygiene.

On the concluding day of the training sessions, a ceremony was organized which was graced by District Sakrand Chairman Sardar Jam Tamachi, Deputy Commissioner Nawabshah Nouman Siddiqui as honorable guests while many high-ranked officials from the district were also present on the occasion. The event was presided over by Chairman Sakrand Town Committee Syed Muneer Shah. The event was chaired by Mr Arif Hassan.

In his opening remarks Syed Shah Muneer spoke about the social enigma created by improper treatment of solid waste and how adoption of e-guard program enabled the town to manage this issue amicably.

Sumaira Gul shared in detail the training process of sanitary workers and e-guard program and its benefits. She pointed out that with the help of Sakrand Town Committee Chairman Syed Muneer Shah, Dr Akhtar Hameed Khan Memorial Trust wants to develop the Sakrand as model town of Sindh.

Later, sanitary workers exhibited what they have learned through a demonstration.

In the end Deputy Commissioner Nouman Siddiqui expressed his views about the whole process and the project launched in Sakrand Town. He also offered help to make the activity a success in the town and invited them to join him for such projects in other parts of the district.

Arif Hassan summed up the entire exercise by explaining in detail as how Dr Akhtar Hameed Khan Memorial Trust was successful in establishing and processing solid waste collected through e-guard system from 4,000 households and commercial centers of the town among which 80% waste was found to be organic which was also utilized for production of compost that became beneficial for the farmers of the area who were also roped in to reap benefits of the project on a larger scale. Only a handful of rejected waste during the whole process was discarded and disposed of in nearby land while the remaining 15% waste was found to recyclable including old shoes and clothes which were sold to local brick kilns. The first product of Haryali Centre's organic compost were scanned and gifted to cotton research institute. The cotton research institute used it in model fields for experiments. The sample of compost was also sent to NARC for analysis. After the successfully completion of initial six months, the town committee offered Dr Akhtar Hameed Khan Memorial Trust to continue extending its technical assistance for 2017-18. In the meantime, Sakrand Town Committee team led by Allahyar Khokhar, Ali Sher, sanitary inspector Abdul Rehman and IRRC Manager Aijaz Ali Keerio visited Integrated Recovery Resource Centre Islamabad for three-day training.

The entire project of Sakrand Town spoke volume of the fact that Pakistan has all the abilities to cover up the issue of solid waste management. Only the requirement is to address the political instability and other economics and social issues which cause hindrance to achieve the goal of making Pakistan clean and green.

There is no denying the fact that inadequate collection and disposal of waste poses a serious health risk to the population and is an obvious cause of environmental degradation in most urban and rural areas of the developing world. The time is ripe to reap benefits of adopting proper solid waste management system and rid the country of many problems we have been facing of late. Being the 6th most populated country in the world; there is a lot of consumerism in Pakistan and with it a great deal of waste being produced. Like other developing countries, waste management sector in Pakistan is plagued by a wide variety of social, cultural, legislative and economic issues and we need to address these issues effectively once and for all.

SAVING ENVIRONMENT THROUGH PROPER SOLID WASTE MANAGEMENT

Most people seem oblivious to the fact that we have a serious – but preventable – solid waste problem across the country. Apart from garbage littered across the urban and rural areas scathing the natural beauty of our beloved Pakistan, solid waste is also a cause of water pollution, air pollution and many other diseases related to its improper management. Apart from some urban centers, where a proper system of solid waste collection exists, the picture of rural areas of the country that do not have proper resources to manage this phenomenon is quite poor. Such was the case with Mansehra, the administrative capital of District and Tehsil Mansehra, in the eastern part of Khyber Pakhtunkhwa where around 1.5 million people were producing around 25 tons of waste per day.

> "The project was initiated to save the local environment, reduce the waste for dumping, to develop a proper mechanism of waste collection system, waste segregation and recycling, converting organic waste into compost, reduce the cost for waste transportation and reduce the required landfill site."

The area was a classic example of improper disposal of municipal waste which posed a serious and dangerous impact on a wide range of areas. This is beyond doubt that garbage thrown in the street or in open spaces is nothing but a public health hazard, while waste dumped near rivers, lakes and streams contaminates the water supply. Meanwhile, another phenomenon, which is worth looking at, is the burning of trash. People often burn rubbish that in the open rather than disposing it of properly. This thing creates pollution and releases toxic fumes into the environment. And in Mansehra, the local population usually restored the later practice; they burned their solid waste in their areas causing smoke, fog and other environmental and health hazards. They were literally unaware of how to segregate and place the waste at proper places. Many households threw their household solid waste in any vacant plots, ponds or in streets near their houses. In general the area lacked the sense of managing the solid waste properly.

Dr Akhtar Hameed Khan Memorial Trust team and e-guard staff met Deputy Commissioner, Mansehra, Muhammad Ayaz, at his office, on October 26, 2017 to find a solution to this problem. Dr Akhtar Hameed Khan Memorial Trust made the deputy commissioner and his team realize how necessary a special cleanliness campaign in urban and rural areas of the district was imperative in this beautiful tourist spot in the eastern parts of the province.

The team apprised the district administration, how a low-cost and self-sustained program namely “e- guard” that has been implemented in different cities and towns of Pakistan including the federal capital, Islamabad, facilitates primary collection and segregation of household solid waste. They were apprised how segregation of household solid waste decreases the quantity of dumping material. The Deputy Commissioner Mansehra was also apprised of the importance of Haryali Centre, another component of the program that produces organic fertilizer through green waste segregation process from solid waste. During the course of its meeting, the e-guard team made the deputy commissioner understand how beneficial, solid waste management could also be for the farmers of the area who could benefit from the compost produced by entire process.

During the meeting, it was revealed that municipal department in the district was dealing with waste management were not focusing on primary but on secondary collection of the waste and they were even unable to manage the waste dumped at waste sites, while the alarming point was in most villages the garbage was being burnt. The e-guard team appraised the local administration of the environmental hazards of the solid waste burning. They were apprised that the municipal solid waste generally contains tens of thousands of dangerous substances in shape of paper, cardboard, food and yard waste, plastics, containers, and textiles. The burning produces toxic air pollution.

Dr Akhtar Hameed Khan Memorial Trust team indicated to the local administration how burning of trash becomes a common practice of garbage disposal due to various reasons and chief among them being the local authorities’ failure to regularly collect the waste. They were apprised as how burning of solid waste pollutes air. They were apprised that general public was unaware of the hazards of burning solid waste as how harmful it was for their health.

E-guard proposed a plan of setting up a project for disposal of solid waste by installation of solid waste disposal plant, Integrated Resource Recovery Center, which will not only clean /dispose of the solid waste but also manufacture compost (fertilizers) for agriculture purpose. Three Tehsils of Mansehra including Balakot Tehsil, Oghi and Mansehra were first selected to check

the feasibility of the project. But after initial assessment Mansehra was finalized for the demonstration. TMA Mansehra also inked an agreement with e-guard for provision of technical assistance for waste segregation, preparation of compost, monitoring of waste collection, and compost marketing for a period of four months. It was mutually agreed that e-guard as a firm will undertake different initiatives regarding solid waste management and TMA will facilitate them. TMA Mansehra besides providing 4 kanal of land for setting up Waste processing unit provided a tractor with trolley and shovels to transfer the waste to the processing unit as well as human resource. E-guard provided training to the locals as how to manage the garbage.

The AHKMT through extensive motivational sessions motivated traders, transporters, hoteliers, government and non- governmental organizations as well as educational institutions both public and private to maintain cleanliness in their areas and how beneficial proper management of solid waste could be for their area.

They took all the stakeholders on board, making them realize that proper management of solid waste was not only beneficial for them environmentally but also economically in shape of organic fertilizer for farming purposes. The basic objective of the project was to save the local environment, reduce the waste for dumping, to develop a proper mechanism of waste collection system, waste segregation and recycling, converting organic waste into compost, reduce the cost for waste transportation and reduce the required landfill site.

Three-day training sessions from 9 to 11 January 2018 was organized by AHKMT at district council hall, district Mansehra where more than three hundred teachers, farmers, LHWs & NGOs, traders, sanitary workers, councilors and trainers were in attendance and were apprised about the importance of solid waste management for organic farming.

At one of these sessions, teachers and students from 20 schools were invited for motivational session. The objective of the training was to get the teachers on board as how they can play a pivotal role in community mobilization regarding negative effects of waste and management. They were told about their responsibilities as how they can mobilize their students whose behavior towards waste takes a crucial role to successful sustainable waste management at school level. They were apprised that a proper waste management system should not only be environmentally effective and economically efficient, but also socially acceptable. Therefore, it was important to drive students to behave more environmental friendly. A painting contest was also organized for the schools of the area on topic “Our Waste Our Responsibility”.

At another session, the AHKMT team apprised the farmers of the area about the importance of nature of compost and also its utilization in farming. During the orientations, experts from the Dr Akhtar Hameed Khan Memorial Trust, were able to made the farmers of the town realize that by adopting a proper solid waste management system they can not only keep their community clean, but this system can benefit them by turning their daily household waste into a productive thing for their farms. E-guard team gave detail briefing regarding IRRC model, e-guard introductions and background and effects of proper management of solid waste. They shared what composting is and how it could be an economic and safe way for treatment of organic waste and has high concentrations of organic matter and available nutrients.

Training objective with LHW &CBO’s was to create awareness, impact and effects of solid waste on environment and human beings. The participants were apprised as how they could play their role in the community about negative effects of solid waste on human health particularly during polio vaccination drives and other activities.

In the orientation session with sanitary workers, the participants were apprised of the impact and effects of solid waste on the community and overall environment of their area. Moreover, they were briefed as how important IRRC could be for them and how its usage can bring them more earning.

The participants were apprised as what sort of impact solid waste can leave on environment, if it not properly disposed. She was of the view that solid waste disposal is not something to cut corners on, and you need waste management solutions that can both make your job easier as well as protect the environment.

In the traders' orientation session, the shopkeepers were asked to clean their shops at evening time, every shopkeeper was asked to keep a dustbin in front of his shop, the traders were asked to hire private sanitary workers for every hundred shops and they will be trained by e-guard team. It was also decided during the session that 50% of fee of sanitary workers will be paid by market association and fifty percent of remaining fee will be collected through waste disposal mechanisms.

At the end of the day, Ghulam Murtaza, Naib Nazim, district Mansehra, gave closing remarks at the session and hailed the efforts of e-guard team in solid waste management and was very thankful to them for conducting separate orientation sessions for all the stakeholders in Mansehra. He also shared that it was the need of the hour to manage the solid waste with a comprehensive and interdisciplinary approach. He called upon all the stakeholders to do proper implementation of solid waste management rules; to build a friendly environment.

At the concluding ceremony of the entire campaign, held at January 12, 2018 the members of the community took oath through which they made their commitment that they will never burn waste in their localities, and will manage the waste in their houses, shops and office effectively, they also agreed not to throw waste from their vehicles, they will always use latrines and toilets, they will take action if they find someone infringing against the act.

The staff of Haryali center shared the work progress and future work plan. Tehsil Nazim Mansehra also accompanied the e-guard team and monitored the completion phase of composting. After analysis and inspection of all processes, e-guard team along with Haryali Centre staff packed final compost in bags. Five bags were given to deputy commissioner Mansehra and five bags to Tehsil Nazim Mansehra.

The overall objective of the initiative was to involve local community and their participation was an encouraging sign for Dr Akhtar Hameed Khan Memorial Trust in realizing the dream of organic farming through solid waste management and making the farmers realize how beneficial organic farming is for their cultivation as on one hand they will be protecting their beautiful environment by properly disposing of their waste and secondly saving hundreds of thousands of rupees they spend on chemical fertilizers for their crops.

The process of waste collection began. Initially e-guard started the processing of 5 ton waste daily in piling at the waste processing unit (Haryali Center) at Mansehra which is a decentralized recycling and composting facility which was built and operated at low costs by using limited mechanical technology, ensuring low operational costs and minimal equipment breakdowns. And from November 2017 till January 2017 a total of 155 trolleys of solid waste and 37 trolleys of animal waste were collected and processed. At processing unit waste was segregated into three categories i.e. recyclable trash – which comprised 15-20% of total waste, organic waste including vegetable and fruit peels comprising 60-70% and unusable and rejected waste material like stone and dirt comprising 15-20% of the total waste. At the Haryali center where segregation team sorted it into different portions, 80 % waste was found to be organic which was utilized for the composting for the purpose of organic farming. One of the main objectives of the project!

Initially it was agreed that only 5 tons of waste would be processed at the waste processing center at Mansehra, which was later to be expanded to 10 tons of waste per day. It was also decided that community mobilization from door-to-door collection in surrounding areas would also be ensured while the processing of the waste would also be intensified.

During the course of the entire scheme, AHKMT worked on softer components of the project like community mobilization and providing training to staff etc. while e-guard took upon itself the responsibility of harder task comprising the procedures of waste collection to compost production. On the other hand TMA Mansehra took upon itself to provide manpower and resources for the project and the entire process was completed efficiently.

E-guard is a supportive organization of Dr Akhtar Hameed Khan Memorial Trust and is well equipped to handle the harder tasks of establishing waste management projects. They do not conduct workshops or provide training, which are softer components of the entire process.

COMPOST PREPARATION AT SEWAGE TREATMENT PLANT

In Pakistan solid waste management has become a significant problem, despite the fact that there are many policies being formulated for protection of environment from solid waste but these policies are mostly implemented in cities and rural areas often remain neglected. In rural areas mostly open dumping is done. But as rural population is also expanding in size, it has become inevitable that a proper waste management system is also extended to villages because around 61 per cent of people in Pakistan live in rural areas.

Keeping in view this objective, Dr Akhtar Hameed Khan

> “Due to limited resources, Dr Akhtar Hameed Khan Memorial Trust was unable to establish a proper fully functional IRRC and utilized a sewage treatment plant established by National Rural Support Program and a shed to replicate IRRC in the area, which is also indicative of the fact that in place of a establishing a new IRRC, sewage treatment plants, which are abundant in the province of Sindh could be utilized for the purpose.”

Memorial Trust joined hands with National Rural Support Program, and signed a Memorandum of Understanding (MoU) for an e-guard integrated waste management program and development of an Integrated Resource Recovery Centre (IRRC) in Union Council Qaimpur, in Tehsil Hasilpur of administrative division of the Bahawalpur District of Southern Punjab from August 2017 to January 2018.

Due to limited resources, Dr Akhtar Hameed Khan Memorial Trust was unable to establish a proper fully functional IRRC and utilized a sewage treatment plant established by National Rural Support Program and a shed to replicate IRRC in the area, which is also indicative of the fact that in place of establishing a new IRRC, sewage treatment plants, which are abundant in the province of Sindh could be utilized for the purpose.

Most of the developing countries like Pakistan lack a proper waste management mechanism. The situation in Pakistan is far gloomier when one looks at the rural areas of the country. There the situation is at its worst because people of these hamlets are literally unaware of the damages solid waste is causing to their lives and environment. They don't have an iota of an idea as what management of solid waste can bring to their lives. It was learnt that the disposal methods used by residents of Qaimpur Union Council were obsolete. Majority of residents indicated that the dumpsites had become breeding place for disease vectors, causing diseases, and making the place dirty. The breeding site for diseases was also taking its toll on public health. Although they were aware of the problem, they could not help themselves to address it.

The project of Qaimpur, Union Council of Hasilpur Tehsil was a challenge for Dr Akhtar Hameed Khan Memorial Trust team because on one hand it was really hard to make the people realize what wonders solid waste management can bring to them and on the other lack of resources made it tougher for the AHKMT team to achieve its desired results. From August 2017 to January 2018 Dr Akhtar Hameed Khan Memorial Trust team showed the motivation to achieve its target and in collaboration with the staff of National Rural Support Program, Local Support Organization, Chairmen Union Council and Tehsil Municipal Administration was not only able to identify the target areas, but also used a sewage treatment plant for composting production and evaluated its progress.

Dr Akhtar Hameed Khan Memorial Trust team also provided training to the involved workers and assigning of duties to them for primary collection and waste segregation and technical support for running the IRRC efficiently.

The survey team was able to take 1000 households of the union council on board. After the initial surveys; 100 household were also identified for collecting of data for solid waste collections specifically for testing purposes at the compost processing unit. The team faced some challenges during solid waste study which showed that there were hiccups in collection of waste from selected houses because most of the houses disposed of their waste before the collectors could get to them. However, the team managed to collect 906 kilograms of garbage in the first week in which 65 kilogram waste was found to be rejected grade, while 27 kilogram was found to be recyclable, 785 kilograms quantity of waste was green and 29 kilogram could Leachate, which was a good sign for composting because 87% of the waste was found to be organic waste, 3% was recyclable and 7% was rejected and 3% lecher waste.

After this initial success, the garbage was segregated, and recoverable materials that were organic in nature, such as plant material, food scraps, and paper products, were recovered through composting and digestion processes to decompose the organic matter. The resulting organic material was then recycled as mulch or compost for agricultural or landscaping purposes.

Meanwhile, a training manual was also developed for members of Local Support Organization that was to provide manpower for the primary collection of waste and the cleanliness campaign was also joined by three hundred students from boys and girls schools of the area.

The participants were made aware of the importance of solid waste management and how they could benefit from it. They were made to understand the phenomenon that many diseases in the area were only spreading because of solid waste which was affecting their lives badly. They were made to understand that if they look after their health and adopt safety habit they can reduce the impact of diseases created by solid waste on their daily lives.

The basic aim of the Trust was to involve the whole community of the area because it was their participation and complete management that could make the system sustainable on long term basis. Looking into the managerial and financial capacity of local union councils or tehsil municipal administration, it seemed almost impossible that they could have been able to arrange collection of waste in the villages. Hence introduction of e-guard model was aimed at the management of waste at local level by the people who are producing it.

During the campaign orientation sessions, Sumaira Gul and her team members made the people of the area realize that rural areas are facing serious environmental degradation and public health risk due to improper disposal of solid waste littered on streets and other public places. They also told the villagers that clogged drainage system poses serious ramifications for the entire locality because it helps different diseases to spread easily in the locality.

In a meeting with DPO Mazhar at Bahawalpur, Dr Akhtar Hameed Khan Memorial Trust team shared all the details of Hasilpur Project in detail, and discussed at length all the expected outcomes. The DPO was apprised that final product of Hasilpur composting plant was ready to be used, which the local administration can get tested from agriculture department Bahawalpur or NSRP Head Office Islamabad to evaluate its utility.

At a review meeting on January 26, held at the office of NSRP in Islamabad, the participants from Dr Akhtar Hameed Khan Memorial Trust and National Rural Support Program reviewed the project in detail discussing all the achievements and the hiccups besides deliberating upon as how the project could achieve better results through further enhancements in it.

Mr. Agha Ali Jawad, from NSRP appreciated the efforts of project team. It was mutually decided that both teams would be responsible to execute different tasks through mutual collaboration.

It was also decided that a proper demonstration of how to use compost will be held for which either the facility at IRRC Qaimpur or a small house, a garden or a piece of farming land in Bahawalpur could be utilized.

It was also decided in the meeting that evaluation of IRRC will be conducted by MER for assessing the relevance, efficiency, effectiveness, sustainability and scalability of compost, which could later be sold at Rs5 per kilogram to farmers and Rs25 per kilogram to nurseries. Later the evaluation process was conducted successfully.

THE FUTURE:
ORGANIC FARMING THROUGH SOLID WASTE MANAGEMENT

gef SGP The GEF Small Grants Programme

UNDP Empowered lives. Resilient nations.

"IRRC in the town converted organic waste into compost and successfully managed to produce **16 tons** of compost from solid waste."

Throughout most of human history, the amount of waste generated by humans was inconsequential due to low population density and low societal levels of the exploitation of natural resources. But with due passage of time and following the onset of industrialization and the sustained urban growth of large population centers around the world, the buildup of waste in urban centers deteriorated the levels of sanitation rapidly thus affecting the overall quality of life in cities. But the story didn't end here; the rural areas also got affected by the rapid rise in solid waste around the globe as well. In most instances solid waste of cities is dumped daily into nearby villages and small towns.

Several methods since ages are in practice to manage this waste properly. Composting is one such practice which dates back to early Roman Empire and was mentioned as early as Cato the Elder's 160 BCE piece 'De AgriCultura'. It was in 1920 when composting as a tool for organic farming was modernized in Europe. It is a established fact that organic farming though solid waste management is possible and cost effective because of the process of composting, which provides a sense that waste is not something that should be discarded or disposed of with no regard for future use.

Nobody can deny the true benefits of proper management of solid waste for urban dwellers because public cleanliness and the safe disposal of wastes are essential to public health and environmental protection of the entire society. In Pakistan, agricultural sector is backbone of our economy and most of it is based in the rural areas, which lack a proper solid waste management system like urban centers of the country.

Therefore keeping in view the needs of the rural areas both economically and environmentally, Dr. Akhtar Hameed Khan Trust, took an initiative to reach out to the people of Sakrand, a remote town in district Shaheed Benazirabad, of Sindh, which like rest of the rural areas of the country was found to be in deplorable condition and did not possess a proper solid waste

management system. People in the town had no idea what composting is or what benefits they can reap by practicing it. The town replicated a poor picture of rural Sindh which hosts the farming community, coping with their daily life amid heaps of garbage littered either in the broken streets or open plots. The people of the area had no idea whatsoever as how to cope with the problem. That's when the team of Dr. Akhtar Hameed Khan Trust stepped in! Experts from the Trust, to some extent made the people of the town realize that by adopting a proper solid waste management system they can not only keep their community clean, but this system can benefit them by turning their daily household waste into a productive thing for their farms.

AHKMT has been working in Sakrand Town since January 2017 and completed many tasks pertaining to similar urban issues with success.

AHKMT maintained a close liaison with local body's representatives as well as Town Committee which identified the issues related to waste management and adverse impacts of chemical fertilizer on the local crops. The Town Committee requested AHKMT to visit the area for evaluation and betterment of waste management system.

Sakrand Town Committee is divided into 15 urban wards and 2 zones. In the town the sanitary teams are providing door-to-door waste collection services through a proper system for 3,000 households and commercial areas. The collected waste is brought to waste processing center (IRRC) where 80% organic waste is being utilized for composting by wind rows. Other recyclable waste is sold in markets. The prepared compost has also been tested by Cotton Research Institute Sakrand. The first prepared compost was gifted to this institute. They are utilizing it as a sample in cotton fields.

AHKMT conducted a study from 25 farmers during crop season for research purposes. The data was collected from farmers regarding the production of compost and the expenses of chemical fertilizer and pesticide. After collection of data and utilization of organic compost experiment the result was shared with 100 farmers as how beneficial organic farming could be for them.

Sakrand Town provided land and arranged financial resources for IRRC. The cconstruction process took almost 6 months to complete. During the construction, AHKMT monitored, supervised and provided technical assistance for the project. After the construction, IRRC is operated by AHKMT and e-guard. The waste collection, segregation and composting process is the responsibility of e-guard and the technical, coordination, supervision, evaluation and reporting is the task of AHKMT. Project was initiated with collaboration of UNDP (small grant Fund) SGF and Sakrand Town Committee & ATI.

Two major components of the project are:

1. Improve solid waste management system with collaboration of local community and town committee
2. Promote organic farming

Under the project, identifying farmers was the major task and their farming patterns were to be studied. Soil and water testing was also part of this project which were completed efficiently.

AHKMT arranged orientation for farmers to make them better understand what organic farming is besides providing them compost for 100 acres of land with support of Cotton Research institute, ATI.
For compost utilization and marketing SAFCO was to be involved.

Trust teams underwent rigorous awareness campaigns in the area, met all the stakeholders of the area and apprised them of the benefits of the organic farming through solid waste management. The team was successful in taking Sakrand Town Committee on board by making them understand the benefits of solid waste management and how it could be beneficial for the local farmers. Dr. Akhtar Hameed Khan Trust team got into a Memorandum of Understanding with Sakrand Town Committee, as part of government private sector collaboration to set up an Integrated Resource Recovery Centre for which Sakrand Town Committee provided Rs2.5 million. The Trust was able to establish the first IRRC in the town which converted organic waste into compost and successfully managed to produce 16 tons of compost from solid waste.

On one hand, the Trust managed to take SAFCO Support Fund on board to provide loan to the farmers who showed willingness to use compost for their farms while on the other it also assured the local farmers that for six months, each farmer who will join the project will be provided 1 ton compost free of cost for one acre of their land, which seemed quite an intriguing offer for the farmers, who had been spending hundreds of thousands of rupees on chemical fertilizers.

Integrated Resource Recovery Centre in remote areas are meant make people realize as what sort of benefits they can get. People of Sakrand need further motivational

sessions to understand the true meaning of organic farming. They would have to be made to realize that purchasing food items from organic farmers is a surefire investment in a cost-effective future because urbanites love what is organic and pay anything for it.

Dr. Akhtar Hameed Khan Trust also needs to set up a proper mechanism for primary collection of solid waste in the area, but there are some hiccups in the way which need to be addressed. To some extent it was discouraging to find, that some government organizations and CBOs remained worried regarding solid waste management process and its implications for the society.

There is also need to improve the working relations between government and private sector to ensure that organic farming is implemented in letter and spirit as farming organically is more useful which not only addresses some of the environmental issues as well as the issue of agricultural chemicals in conventional farming systems.

So reverting to organic farming will not only help the farmers, but will also help the government save national exchequer from extra burden of oil import bill. There is no denying the fact that in past conventional agriculture methods have enjoyed great subsidies and tax cuts from most governments, which led to the explosion of commercially produced foods that have increased dangerous diseases. It's time government of Pakistan should invest in organic farming technologies to mitigates these problems and secure the future of coming generations.

Organic farming through solid waste management can be a valuable resource if addressed correctly, through proper policies and implementation practices. It has been understood that with coherent waste management practices there is an opportunity to reap a range of benefits for the community in Sakrand as well as other such populace around the country.

ASSISTANCE FOR CREATION OF 'SAAF MAHOOL'

In order to promote circular economy, a rather newer and environment friendly concept for emerging nations like Pakistan, which involves the principles of make, use and reuse and is an alternative to the traditional linear economy based on the principles of make, use and dispose, Dr Akhtar Hameed Khan Memorial Trust joined hands with Pak Mission Society (PMS) in its Islamabad based project titled 'Saaf Mahool' in Islamabad from December 2017 till September 2018 for proper collection, segregation and compositing of solid waste.

> "A used product can provide raw material for another product, which significantly reduces the costs associated with producing a product using fresh raw material"

Pak Mission Society, an organization working to reach unreached and underprivileged communities regardless of race, gender, ethnicity, class, religion and social background, to share God's love and resources, selected Dr. Akhtar Hameed Khan Trust after evaluating the success rate of the implementation of the concept of circular economy by the Trust at its Integrated Resource Recovery Center after observing several positive impacts of the project including 'Resource Efficiency' which helps in reducing the stress on the already depleting resources of earth and the 'Economic Benefit' for its cost efficiency.

Dr Akhtar Hameed Khan Memorial Trust was able to convey and make the management of Pak Mission Society understand how a used product can provide raw material for another product, which significantly reduces the costs associated with producing a product using fresh raw material. In a country like Pakistan where a lot of raw material is imported for industries to produce finished goods, it saves a lot of money in foreign exchange whereas in the environmental context implementation of this concept reduces the waste footprint because most of the material can be recycled to be used in another industry. As part of its technical support, Dr. Akhtar Hameed Khan Memorial Trust (AHKMT), first of all facilitated the project team to initially identify and select two communities of Islamabad including Christian Colony, Sector H-9/2, and Essa Nagri, Sector I-9/1. Later the AHKMT team organized an awareness session for the stakeholders to provide them with basic information about solid waste management and how adoption of a proper solid waste management system can not only keep a community clean, but it can benefit community members by turning their daily household waste into a productive thing. After completing the baseline surveys in the aforementioned communities, the AHKMT team members identified and selected lane managers for follow up of collection process in targeted communities where the participants were apprised of the impact and effects of solid waste on the community and overall environment of their area. Moreover, they were briefed as how important proper collection, segregation and compositing of solid waste could be for them and how circular economy can bring them more earning. The AHKMT team conducted three stakeholder meetings to review the progress of the project on monthly basis besides assisting the project team of Pak Mission Society to select three spots for establishment of Haryali Hub (work on the centers is underway).

Apart from its routine check on the activities, AHKMT team also continued with its support for the PMS project and planning for 'Saaf Mahool'

activities in the selected areas of Christian Colony, Sector H-9/2, and Essa Nagri, Sector I-9/1. The AHKMT team also provided technical support to the project team in planning and designing of promotional material for 'Saaf Mahool' project as well as designing and development of waste compost boxes for Haryali Centers. The AHKMT team conducted a training session organized by Pak Mission Society for provision of training and awareness for effective collection of solid waste at household level. Special training session with community particularly

women on 5Rs was also conducted by the Dr Akhtar Hameed Trust. They were apprised of the 5Rs of solid waste management system including Refuse, Reduce, Reuse, Repurpose and Recycle. About the Refuse, the women participants were

apprised through examples that every household is full of stuff people generally don't need, and each thing has an environmental cost. The women were taught that they should be thoughtful when buying, and they should use the power of their money to tell production companies understand what people want and don't want which could not only save money but also help save environment from greenhouse gas pollution whereas the participants were apprised that they should reduce their overall consumption by questioning all significant purchases and resisting impulse buying.

They were asked to revert to reusable instead of disposable because everything people buy and use in their daily lives ends up being thrown away at some point. It goes to landfill, becomes litter or pollutes our oceans, contributes to the emission of harmful greenhouse gases, or harms the planet in other ways. They were apprised to cut their consumption to reduce their environmental impact. They were taught that reusing an item is how earlier generations made the most of limited resources in less wealthy and consumer-convenient times. They were also given tips about how to repurpose their household items by simply taking something they were no longer using and alter it for another more practical use. Then finally they were apprised that they should revert to recycling more and more because anything made from metal, wood, most plastics, paper and cardboards, and electronic e-waste are all likely to have a recycling option.

A special training session was arranged for waste pickers under the e-Guard model which facilitates the line department in primary collection and segregation of household solid waste. The waste pickers were taught how segregation of household solid waste decreases the quantity of dumping material and the importance of the process of composting for production of organic fertilizer. Later a week-long survey on collection of solid waste from 100 households in Sector H-9/2 was conducted by Dr. Akhtar Hameed Khan Memorial Trust for assessing the quantity of green, recyclable and rejected waste.

The AHKMT also guided Pak Mission Society team in finalization of toolkits and shared sample of job description of Integrated Recovery Resource Center staff and also for the Haryali centers.

It was also quite an honor for Dr Akhtar Hameed Khan Memorial Trust to facilitate a visit of Tearfund,

H-9/2 is one of the urban slums and low income locality in Islamabad having **850** households with population of almost **5100**. Overall the community is poor and most of them are performing sanitary tasks in different offices and houses.

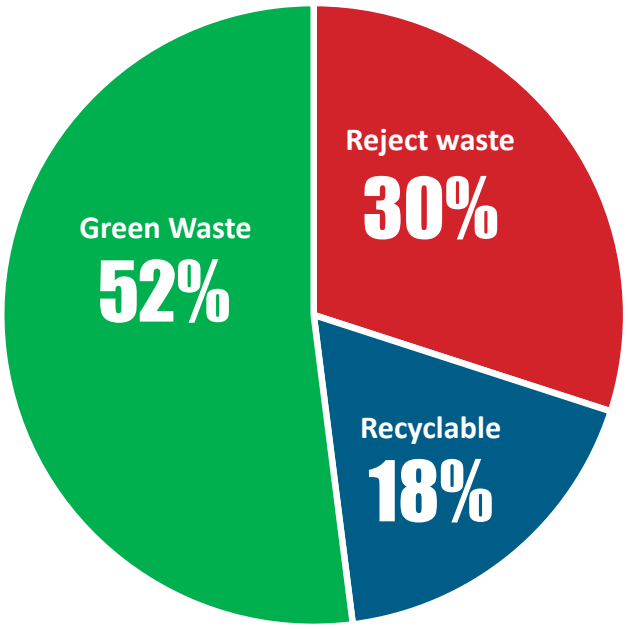
Waste mismanagement is their hottest issue. AHKMT conducted a 7-day waste study from **100** houses in the locality, for waste composition to understand what sort of waste is being produced by these people and what the ratio of organic and inorganic waste is.

Through the study it was found that **52%** waste produced by the locality was organic, while **18%** was recyclable and **30%** was rejected waste.

After the study waste collection process began from **300** homes. Haryali Hub is working successful where **100%** service charges are recovered from **100** households. Recyclables of **Rs 5,060** were sold to scrap vendors in the first month of working of the Haryali Hub.

The land of Haryali Hub was acquired on lease for three years. However, it is also encouraging that the entire infrastructure is moveable which can be shifted. It is also encouraging sign that cost of this removable infrastructure is quite low as compared to permanent infrastructure. At the Haryali Hub collected waste is also segregate.

Waste Analysis H-9/2, Islamabad



SACOSAN-VII CALLS FOR BASIC SANITATION FOR ALL

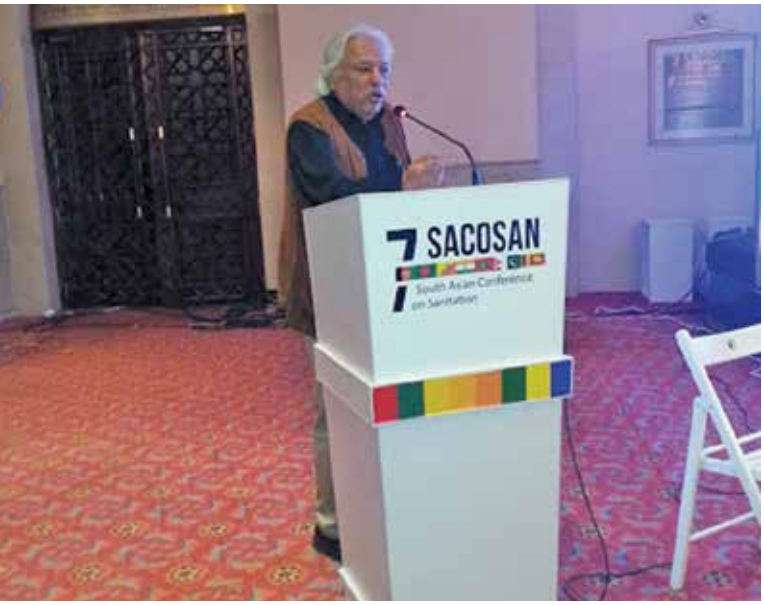
Background

South Asian Conference on Sanitation (SACOSAN), a government led biennial convention held on a rotational basis in each SAARC country provides a platform for interaction on sanitation. SACOSANs are intended to develop a Regional agenda on sanitation, enabling learning from the past experiences and setting actions for the future. The first conference was held in Bangladesh in 2003, the second in Pakistan in 2006, the third in India in 2008, the fourth in Sri Lanka in 2011, the fifth in Nepal in 2013, the sixth in Bangladesh in 2016. The seventh SACOSAN was hosted by Pakistan from 11 to 13 April 2018 at Serena Hotel, Islamabad.

Proceeding:

Promising more action, and making commitments

for ensuring no one is left behind, participants at the concluding ceremony of the three-day international conference titled “Safe sanitation in South Asia-Plan 2030” on sanitation, vowed progress towards universal basic and safely managed sanitation services and hygiene.



Federal minister for Climate Change Senator Mushahidullah Khan while addressing the closing ceremony of SACOSAN 7 said that good sanitation is crucial for people health and financial prosperity and economic growth. A lot has been achieved during Millennium Development Goals era by the South Asian Countries with Pakistan, Maldives and Sri Lanka achieving Millennium development Goals sanitation targets. However still 500 million people in South Asian Countries defecate in open.

Held on rotational basis in South Asian Association for Regional Cooperation countries, the conference provided a platform for interaction on sanitation agenda. Some 500 international and national delegations convened for the event including those from Afghanistan, Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan and Sri Lanka. Heads of delegation from these countries signed the Islamabad SACOSAN Declaration committing to establish baselines and water and sanitation for health (WASH) targets for sustainable development goals (SDG) including the elimination of open defecation and progress towards universal basic and safely managed sanitation services and hygiene. It was also agreed that all countries in the region should review and align their national and sub-national policies and strategies with safely managed sanitation services and hygiene as outlined in the SDGs.

Declaration included establishment of Wash targets for SDGs such as elimination of open defecation

Participants agreed to streamline and align data collection tools, processes and approaches of key national and sub-national surveys to track progress on WASH-related SDGs.

They undertook to ensure no one was left behind by generating evidence to understand inequalities in access to WASH especially around geographical areas, vulnerable groups and income levels; improved targeting of those least served; strengthening participation and accountability in collaboration with sector partners.

AHKMT PARTICIPATION:

Mr. Arif Hasan AHKMT board member chaired 02 sessions on including importance of urban water and sanitation utilities networking within south Asian countries and Community Voices by Civil Society organizations.

A team from Dr Akhtar Hameed Khan Memorial Trust comprising Mr. Hamidullah, Ms. Sumaira and Mr. Zulfiqar Ali got the opportunity to exchange views with participating delegates from Bangladesh, India, Bhutan, Nepal, Sri Lanka, and Maldives on ways and means to get rid of environmental changes in South Asia, specifically establish water and sanitation policy on a firm basis with mutual cooperation.

AHKMT team at its stall shared its experiences with the visiting delegates regarding solid waste management generating interest from the experts from other South Asian nations.

The team also discussed growing sanitation and wastewater management challenges in the region, and learned how to accelerate the progress of sanitation and hygiene promotion in South Asia where it has become a matter of urgency.

WORLD HABITAT DAY CHANGE OF ATTITUDE TOWARDS WASTE MANAGEMENT STRESSED

World Habitat Day is observed every year on the first Monday of October throughout the world. It was officially designated by the United Nations and first celebrated in 1986. Habitat Day is celebrated in first 5 days of the October and in the remaining month World Habitat Cities is celebrated. The purpose of the Habitat Day is to reflect on the state of our cities and towns and the basic human right to adequate shelter. This year's theme was 'Municipal Solid Waste Management.' In 2010 it was estimated that every day 0.8 kilograms of waste is produced by every person in the world. And the amount of total waste generated is expected to triple to 5.9 billion tons a year by 2025, due to increased consumption and ineffective management strategies. Cities often spend a large proportion of their budget on Municipal Solid Waste. It also aims to realize the citizens of its collective responsibility for the habitat of future generations. As part of the Habitat Day, celebrations, UN-Habitat, Dr. Akhtar Hameed Khan Memorial Trust (AHKMT) and NCPC in collaboration with academia organized a ceremony at IRRC, G-15, Islamabad October 01, 2018.

Objectives:

- Urbanization and economic growth are creating a potential "time-bomb" of poor solid waste management, the significant impact on human health and the environment will be felt by nations

at all levels of development

- Highlight the importance of Integrated Resource Recovery Center and acknowledgement of the services
- All cities regardless of their size and financial capacity can improve upon the current state of solid waste management to become 'Waste-Wise Cities'. Reducing operational cost while at the same time minimizing negative impacts on health and environment;
- Academia, NGOs and other institutions should learn from the examples of IRRC and should carefully examine technological solutions implemented
- Government and academia should make long-term strategic plans for urbanization which fully consider solid waste generation, treatment (including recycling) and identify adequate space like success model IRRC
- National governments should design financial and other incentives that will promote a transition to a more circular economy, built around resource use and efficient recycling and reuse as outlined in SDG12.5 on reducing waste generation through prevention, reduction, recycling and reuse;

Program was hosted by UN-Habitat in collaboration with Dr. Akhtar Hameed Khan Memorial Trust at the Integrated Resource Recovery Center, Sector G-15, Islamabad.

Ms. Sumaira Gul, AHKMT
Mr. Javaid Ali Khan, UN-Habitat
Mr. Irfan Tariq, DG MOCC
Mr. Jamil Asghar Bhatti, Solid Waste Expert
Ms. Sana Tahir, NCPC

Moreover, students and faculty of the following universities were also in attendance:-

University of Engineering and Technology Taxila
International Islamic University
Bahria University
Fatima Jinnah Women University

Ms. Sumaira Gul welcomed the participants and briefly explained that the root cause of the serious dilemma of pollution faced by human kind was the mismanagement of solid waste. She apprised them of the problems people are facing and how we are heading towards the severe issues of the environmental disaster. In future we will face severe crisis regarding waste management. Sumaira Gul pointed out that solid waste was also polluting our groundwater, and if right steps are not taken now people should get them ready to face acute shortage of potable water in future.

Ms. Sumaira Gul also briefed the participants about the

IRRC establishment and its overall success. IRRC model was established in 2015 with the help of UN-Habitat and UNESCAP. She said we are working on the 85% of waste as almost 60% of the total waste is green waste, 25% of the total waste is recyclable and 15% is reject able waste. On that Mr. Jamil Asghar Bhatti added that 15% of the rejected waste is also resource. He was of the view that this waste could be used to make fuel "RDF" (Refuse-derived fuel). "In waste everything is recyclable, nothing is junk in the garbage."

Ms. Sumaira Gul further apprised the participants about a couple of projects, Dr Akhtar Hameed Khan Memorial Trust is running in Sakrand and Hasilpur. She also pointed out that the Trust invested more money on the IRRC in Sector G-15 but now they were heading towards the cost effective models of IRRC Sakrand and Hasilpur with the support of local government and community based organizations.

Mr. Bilawal shared the details of beneficiaries of IRRC serving in G-15/4 and also e-guards working in B-17 and F-17 Islamabad. These projects are of more capacity than IRRC. He invited the participants to visit these places as well.

Mr. Javed Ali Khan stressed the need of showing commitment towards saving habitat. He apprised the participants that solid waste was not so easy to manage, as there were many hurdles people deem to face while managing solid waste as majority of them lack proper knowledge regarding zero waste concepts.

Mr. Jamil Asghar, President of Pak Waste Management Association discussed about the solid waste management. He told the participants that 90,000 ton waste is generated on daily basis in Pakistan and most of this waste is dumped due to the improper implementation of solid waste management. He stressed the need of changing our attitude for proper disposal of solid waste saying although people know where to throw their waste but they don't do so because of lethargy.

Ms. Sana Tahir from NCPC shared that IRRC was the first waste management center to manage and segregate solid waste in a unique way.

Mr. Sheraz from the UN-Habitat shared the technical and financial aspects of IRRC with the participant that waste management was very sensitive because if not taken care of properly, the dump will rot and emanate foul smell.

Mr. Irfan Tariq, Director General, Ministry Of Climate Change (MOCC) shared that IRRC model was a joint effort of us and while managing solid waste there is an important role for the safe disposal of garbage at IRRC. IRRC model is unique and this case study must be presented at different forums. He also assured the participants that investment on such kind of IRRC returns the value.

Later, Ms. Sumaira Gul guided the participants in the field visit of IRRC. She explained about the process of waste collection, segregation, composting. The participants practically observed the compost boxes and procedure of maintaining temperature and leachate. They were also briefed about rainwater harvesting system at the IRRC. They were also briefed about poultry waste utilization to enrich the compost. Also they were shown Kitchen gardening at the IRRC. Ms. Sumaira explained the concept that all of these activities in IRRC generate income and ensure sustainability of the center. At the end, a group photograph of all the participants was taken.

After that participants were requested to share comments regarding IRRC model after field-visit of IRRC.

CASE STUDY OF FIRST E-GUARD ENTREPRENEUR: HAMEEDA JAVED

My name is Hameeda Javed. My husband Javed was an asthmatic patient. We never worked for Municipal Corporation and due to our religion, Christianity, no one else hired us. Due to tough economical situation where major sum of our meagre earning went into house rent and electricity bills, it was quite hard to survive with a family of seven members including five children. As a matter of fact, we had no other option but to take loans and unfortunately with the passage of time, it soared up to around 5000 rupees and the monthly mark up was Rs500 and we had little resources to pay this amount. So we reached an agreement with the person who had given us the loan that my husband Javed will work for him and under the

deal of barter trade, he will provide, Javed a basket so that he can collect second hand clothes from houses and in return given them utensils, whereas 50% earning made from the sale of second hand clothes would be given to the loan provider in return as mark up.

In 1996, one of our neighbours who worked with Rawalpindi Municipal Corporation as an inspector told us that a private organization (AFB) requires sanitary workers for Dhoke Mangtal. They required a worker to collect household waste and would provide a wheelbarrow for this purpose. The opportunity was good, however it was quite difficult for me to work alone because one of my arms was burnt and I could not work properly. I could manage the wheel barrow but it was difficult for me to empty it, therefore my husband also joined me in the work.

AFB besides repaying our loan also paid us Rs. 5000 as credit on monthly instalment Rs. 500. One of our problems was resolved. My husband was free from the mortgage for which he had to work for another person despite his health condition. It was a tough life and so many problems were still haunting us. Therefore, we took up the matter with the owner of ABF and described to him our ordeal pertaining to our house rent for which we had to dish out Rs. 300 per month to the landlord and he was still disturbing us. It was quite kind of the ABF that it provided us a place to live in their school and in return we had to clean the building after school time.

My daughter took it upon herself to perform the task.
Our daughters were young and we usually remained quite worried about their marriages. We were dragging our lives but in the meantime my son also joined us. Initially we were assigned around 300 households and some shops to collect the waste. We were paid Rs. 10 by each house and we were earning Rs. 3000 monthly whereas shops used to pay us around 1000 to 1500 rupees. We were properly trained by the organisation, how to segregate the collected waste for which we were provided a couple of bags. We segregated the recyclables from the waste in shape of iron, paper, bottles etc. The community, we were working in was not that rich and sold their waste. But usually we get a handful of recyclables from the houses, but collectively these recyclable items earned us around Rs. 1500.

With the passage of time, my two other sons also joined us in the work. One of my sons accompanied his father to collect waste from shops, while my son Liaquat joined me and we collected waste from houses. Luckily, the number of houses from where we collected waste reached around 700. We also provided our services in Scheme No 7 where households paid us Rs. 50 whereas households paid us Rs. 30 in Mazharabad.

I start saving and applied for a loan from the same organization as well after returning their old one by paying 1000 per month. Two of my children were studying in Alfalah School. In the meantime, I started saving money for the dowry of my elder daughter as she was soon to be married. One of my sons worked as a sanitary worker in an institute while the other helped me.

In 2007 my husband died due to protracted illness. My younger son also started working with me. In the meantime we were able to purchase a plot on instalments, which we paid in a period of around five years. In the meantime another of my son who got his CNIC and got a job with.

But in the meantime our work has expanded and service charges increased according to inflation. Now we are getting 100-200 rupees monthly each household.

The wheelbarrow provided by the organization was durable with huge capacity. We usually managed around 100 houses in two trips, but later we bought another smaller wheelbarrow and managed 15-20 houses extra in a single trip. The dumping ground assigned by the organisation was near to the main road initially, but later it was shifted to a ground. After some years, Tehsil Municipal Administration, allocated a contained near a Nullah for garbage dumping. But as per our training instead of dumping our garbage, we segregated it. In the beginning the green waste was used as animals feed, but when the animals were shifted from the city to the outskirts, this process stopped and we brought the waste to the dumping spot instead of throwing it into Nullahs or plots.

Now at this time I have 400 Houses and I earn 100-200 from each household. One of my sons joined RWMC. But when Albayrak downsized, my son was terminated and he joined me again.

Our wheelbarrow supported us for 22 years and is still working but due to high repair expenses, and disturbances in our work we requested our old organisation for a new wheelbarrow. They asked us to return the old one because it was a symbol for them. We traded our old wheelbarrow with a new one.

I am determined to continue my work till my last breath and also hope that my sons will continue their work.

INTERNATIONAL CONFERENCES/FORUMS

REGIONAL WORKSHOP ON SUSTAINABLE DEVELOPMENT BENEFITS OF DECENTRALIZED MUNICIPAL SOLID WASTE MANAGEMENT IN ASIA-PACIFIC REGION, BANGKOK, THAILAND

Background

Environment and Development Division, ESCAP organized a "Regional Workshop on Sustainable Development Benefits of Decentralized Municipal Solid Waste Management in Asia-Pacific Region" during the SDG Week at the United Nations Conference Centre (UNCC), Bangkok from 30 November to 1 December 2017. This regional workshop was one of the activities of the project "Pro-poor and Sustainable Solid Waste Management in Secondary Cities and Small Towns" implemented by ESCAP in partnership with Waste Concern of Bangladesh.

The workshop provided a platform to share the experiences and lesson learned from the management and transformation of waste-to-resource initiatives by adopting resource efficient and sustainable solid waste management practices based on the principles of Reducing, Reusing, Recycling (3R) approach. The workshop focused on innovative approaches, including-the Integrated Resource Recovery Center (IRRC) model used in the implementation of waste-to-energy pilot projects by ESCAP in nine secondary cities and small towns in six Asian countries, shared the sustainable development benefits of the IRRCs, and explored opportunities for financing such innovative approaches. The workshop was attended by the representatives of the national and local governments, urban waste management experts, project implementation partner organizations, and UN agencies and international institutions.

To address the challenges of inefficient urban waste management, ESCAP together with its technical partner: 'Waste Concern' is implementing the Integrated Resource Recovery Centers (IRRCs) that are locally appropriate solutions for sustainable municipal solid waste management (SMSWM), particularly in secondary cities and small towns in developing countries in the Asia-Pacific region. In 2007, ESCAP and Waste Concern partnered with the local governments of Matale City in Sri Lanka and QuyNhon City in Vietnam, to establish the first two IRRCs. From 2009, ESCAP

enhanced the implementation of IRRCs in seven more cities in six countries, through its project on "Pro-poor and sustainable solid waste management in secondary cities and small towns in Asia-Pacific."

In partnership with national and local governments and non-government stakeholders, ESCAP and Waste Concern have established pilot IRRCs ranging from designed capacities of two to ten tons of incoming waste per day in the following cities: Kushtia in Bangladesh; Kampot in Cambodia; Islamabad in Pakistan; Matale and Ratnapura in Sri Lanka; and Kon Tum and QuyNhon in Viet Nam. Two more IRRCs that will generate biogas from organic waste are being developed in the cities of Jambi and Malang in Indonesia. The pilot IRRCs implemented by ESCAP and Waste Concern have generated further replication in Bangladesh, Pakistan, Sri Lanka, and Viet Nam through national and local government support.

Objectives

The main objectives of the regional workshop were to:

a) Share the implementation experiences and lessons learned from ESCAP and Waste Concern's IRRC project cities, partners, and stakeholders in different countries, and discuss the sustainable development benefits of the IRRCs

b) Discuss and identify opportunities for financial and technical capacity building support for local governments to replicate and scale-up decentralized urban waste management solutions, such as the IRRC, as well as to integrate these solutions into local and national plans and programs for sustainable development

c) Arrive at a set of recommendations for national and local policymakers on effective strategies and actions for sustainable waste management, aligned with the SDGs, NUA, NDCs"), and the Regional Road Map for Implementing the 2030 Agenda for Sustainable Development in Asia and the Pacific.

Participation

A total of 33 participants attended the regional workshop, representing the national and local governments of the IRRC and non-IRRC participating countries, urban waste management experts, IRRC project implementation partners, United Nations (UN) agencies, and international institutions.

Structure of the Workshop

The regional workshop was composed of presentations and panel discussions, both followed by interactive question and answer sessions. The one and a half-day workshop was divided into: (i) opening session; (ii) sharing of implementation experiences and learning from the IRRCs; (iii) opinion building on financing 3R initiatives (idea generation); and (iv) the way forward.

As part of a delegation from Pakistan, MsSumairaGul, Program Manager Dr Akhtar Hameed Khan Memorial Trust attended the conference. At one of the sessions of the conference titled 'Lessons learned from the implementation of the project in nine project cities in six countries in the Asia-Pacific region' and chaired by Ms. BernadiaIrawati Tjandradewi, Secretary-General, UCLG ASPAC, while other participants who deliberated on the issue included Mr. Udeni Chularathna (Sevanatha urban resource center), Ms. Thị Hoài Linh Nguyen, Enda, Vietnam, Mr. YonkoraHeng, Csaro, Cambodia and Ms. Sumaira Gul, Akhtar Hameed Khan Memorial Trust, Islamabad, Pakistan.

The session provided an overview, current status, sustainable development benefits accomplished, and lessons learned of the projects (it also included a discussion on the importance of behavioral changes through enhanced education and advocacy/guidelines from city to separate waste at source) implemented in nine cities and towns in Bangladesh, Cambodia, Indonesia, Pakistan, Sri Lanka, and Vietnam in the Asia-Pacific region. This session focused on lessons learned from the implementation of IRRC in nice project cities in six countries. Each of the session's speakers shared their experiences of implementing or operating an IRRC in their respective countries. The speakers shared the challenges, successful local strategies and partnerships, and the wide range of benefits related to the implementation of IRRCs, as well as the nationally and locally supported IRRC replication.

WORLD URBAN FORUM 9 AT KUALA LUMPUR, MALAYSIA

WUF9 Background:

The UNESCAP and Waste Concern organized a World Urban Forum event from 7th to 13th of February, 2018 at Kuala Lumpur, Malaysia with a focus on "supporting the implementation of the New Urban Agenda: pro-poor local approaches for sustainable urban waste management". UNESCAP and Waste Concern have successfully introduced the decentralized model for Waste Management in various countries such as Bangladesh, Pakistan etc. and with the co-operation of local organizations have successfully executed it by reproducing the idea of Integrated Resource Recovery Centers (IRRC) which have been successes at the local level. In addition, the model has enhanced the local adoption of 3R practices hence successfully dealing with the waste management problem in the country. The objective of the event was to share lessons and outcomes from the IRRCs and highlight to the representatives of cities and partner organizations the value of multi stakeholder, pro-poor, inclusive and integrated solutions to urban waste management and the contributions of integrated approaches to the implementation of regional and global agendas for sustainable development. All participants from various countries and partner organizations were invited for useful input and incorporating best practices globally and the lessons learned during the process.

Proceedings:

Ms. Sumaira Gul, Program Manager at AHKMT was invited by UNESCAP Regional office Bangkok to participate in WUF9 and present the Asian successful solid waste management model and the IRRC. The experience of AHKMT was also shared in the side event organized by UNESCAP in collaboration with Waste Concern.

Among the various participating organizations, only 5 were presenting the lessons learned and their experiences were planned to be shared in the agenda.

The organizations representing a particular country was given a total of one hour to present their success stories. First 15 minutes were given to Waste Concern from Bangladesh to share the original model details. Mr. Iftikhar presented the model details, needs, benefits, opportunities, success and also the hurdles faced during the replication of the model. After his presentation a panel discussion was conducted and the details of the Chair and Panelist questions sessions are as under:

Ms. Sumaira Gul shared why the IRRC was by established in Pakistan (reasons for implementing the model).

She explained that the approach of IRRC was adopted to use waste as resource, IRRC is necessary for sustainability of solid waste management in small cities, to encourage waste to resource by cheapest cost operation, promotion of decentralized approach for solid waste management, echo friendly model, and whether private sector and government could operate jointly or on separate grounds, they could address the issue of waste as a social enterprise.

The second portion of the discussion was AHKMT's partnership Implementation etc.

Ms. Sumaira Gul told the participants that AHKMT was replicating the model in three provinces and four cities with the following details:

- **The Province of Sindh**

1. At Hyderabad city by support of an NGO and sponsor by UNICEF (Rs. 5 million budget).
2. At Sakrand Town, Nawabshah by the support of local government (Sakrand Town Committee) by providing land and Rs. 2.5 million fund

- **The Province of Punjab**

1. At Hasilpur, UC Qaimpur, with the support of NRSP WISE project and UC administration provided and constructed STP sewerage treatment plant waste water disposal point; where AHKMT provided technical assistance to establish door-to-door primary collection. Waste segregation and compost processing process for the NRSP team and CRPs

- **The Province of Khyber Pakhtunkhwa**

1. Mansehra District city area where district administration provided support to e-guard and AHKMT for 6 month as technical support partner for establishment of waste collection and processing unit up to 5 ton capacity. The District Commissioner (Government Bureaucrat) agreed to establish 20 ton capacity IRRC with the support of TMA and District fund

- **Federal Capital (Islamabad City)**

1. Another IRRC is planned for 5 ton capacity in MPCHS a private housing society in Sector F-17 with MPCHS providing land and approved initially Rs. 3.5 million budget for two ton capacity IRRC gradually it will increase the funding for extension of capacity
2. She apprised the participants that in all other cities AHKMT just provided technical assistance but in MPCH the Trust would operate the IRRC as social enterprise and will charge Rs. 500 per ton per day processing fees and Rs. 300 for solid waste management collection system.

Sumaira Gul shared with the participants that based on the experience it could be confidently said that IRRC can be established by support of Government or private sector and could be operated as social enterprise anywhere in Pakistan and globally by other organizations by replicating the UNESCAP and Waste Concern Model.

REGIONAL WORKSHOP ON ENHANCING URBAN RESOURCE EFFICIENCY AND CIRCULAR ECONOMY IN ASIA AND THE PACIFIC IN BANGKOK

Recognizing that there are still enormous challenges and the need for greater urban waste management in the region, UN-ESCAP organized a two-day interactive meeting entitled "Regional Workshop on Enhancing Urban Resource Efficiency and Circular Economy in Asia and the Pacific" on 19-20 March 2018 at the United Nations Conference Centre (UNCC) in Bangkok, Thailand. This workshop was the concluding activity of the project, "Pro-poor and sustainable solid waste management in secondary cities and small towns in Asia-Pacific" which was implemented by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) since 2009 with technical support from the Waste Concern, Bangladesh.

In this event UN-ESCAP invited 3 participants from Pakistan.

1. **Mr. Shah Mohammad Muneer**, Chairman, Sakrand Town
2. **Mr. Fayyaz Memon**, Deputy Director MOCC
3. **Ms. Sumaira Gul**, Program Manager, AHKMT

In the opening session participants were informed about the objectives of the workshop and need of promoting resource efficiency as well as circular economy approaches

in Asia-Pacific region leveraging the experiences from ESCAP's project in managing the solid waste in different cities. They briefed that ESCAP's will discuss main points and use that information for 2019 Asia-Pacific cities reports.

Mr. StefanosFotiou, (Director Environment and development division) EDD ESCAP welcomed participants he highlighted the importance of resource efficiency and circular economy to strengthen the localization of the sustainable development goals (SDGs), promote renewable energy, energy efficiency, decoupling of economic growth and reduce waste and pollution in different ecosystems.

After his address, three participants from different departments and also from three different countries (Thailand, Vietnam and Pakistan) appeared on stage.

Mr. Shah Mohammad Muneer who was representing Pakistan, spoke at length about the Integrated Recovery Resource Centre established in his town by Dr. Akhtar Hameed Khan Memorial Trust and how emancipating it has been for the people of the remote town of Sindh to properly manage their solid waste. after thanking ESCAP for giving him the opportunity to be at the conference spoke at length about solid waste management. He was of the view that in many parts of the world solid waste management is not a priority including Pakistan neither individually nor collectively. He also applauded AHKMT for assisting the Town Committee Sakrand for conceiving, developing and implementing a waste management plant that is not only environment friendly but also sustainable and provides monetary benefits. Shah Muneer also told the audience that the joint venture of solid waste management program was the first of its kind to be implemented by any town committee in Pakistan. He said that solid waste management plant of Sakrand Town was being showcased and many other authorities in Sindh were eager to replicate it in their areas.

Next session was presented by Mr. Ram Tiwari (Economic affair officer, SUDS/EDD). In this session Mr. Fayyaz Memon (Deputy Director) who was also representing Pakistan who gave detailed briefing on Pakistan government's point of view over the issue.

Next session was for the interactive panel and discussion session. There were six panelists from six different countries (Bangladesh, Indonesia, Sri Lanka, Pakistan, Vietnam and Cambodia). The main theme of this session was to discuss that what worked for the features of IRRC in supporting of resource efficiency and circular economies and what did not work in business models which promote the operational sustainability.

Mr. Iftikhar shared his experiences and lessons learned regarding IRRC and its link with circular economies. After the presentation, Mr. Ram Tiwari asked two questions from all the panelists.

First question from Pakistan representative was;
Q. Is national government in Pakistan interested in using IRRC model nationally for providing waste recovery and sustainability? He also asked about the financial support for IRRC replication and local Government engagement for promotion of IRRC.

Ms. Sumaira Gul (Program Manager, AHKMT) shared the detailed and decentralized reply that lack of local government support and leadership in promoting the IRRCs is a perennial challenge in Pakistan. She also shared the exact reasons for the promotion of IRRC which are as follow;

- Its self-sustainable and successful model
- It's an environmental friendly
- It's supportive to achieve MGDs and SGDs goals and targets
- It reduces the land requirement for land-filling
- It reduces the heavy expenses of waste transportation
- It can help turn our waste into resource
- 3 R's approaches and Eco friendly approaches
- It is a social entrepreneur model
- It is close to circular economics by establishing 3 ton capacity model. We can provide jobs to 14 people and the processed organic waste can be utilized in agriculture sector by providing compost to farmers

She also suggested that Pakistan's Ministry of Climate Change (MOCC) can advise Capital Development Authority to whenever they issue the NOC to any developing housing society, to bind them to leave some space for IRRC solid waste management system as it was duty to allocate proper STP (Sewage water treatment plant) to the residents.

As now Ministry of Climate Change cannot directly donate funds for sanitation due to 18th Amendment but by the support of social and development sectors and provincial governments, IRRC model will get the support and promotion as well.

As per second question, she explained that Pakistan has an agricultural based economy but unfortunately our farmers are using chemical fertilizers in farming, which will be a great trouble for them in future. World has not preferred to buy chemical crops and production. Our farmers may face loss due to this we face loss in international market. So it would be great to convert them to do organic farming.

MOROCCO MEETING DELIBERATES UPON COUNTRY ENGAGEMENTS, GOVERNANCE ISSUES

In order to achieve universal access to water, sanitation and hygiene, and consequently the wider Sustainable Development Goal Agenda, Sanitation and Water for All's (SWA) organized a three-day Steering Committee Meeting and a Retreat in capital of Morocco from June 26-28, 2018 to discuss mutual accountability and government leadership in the WASH sector.

Earlier in 2017 Sanitation and Water for All's standing committee was elected in which two persons were elected from Pakistan including, Sumaira Gul, Program Manager, Dr Akhtar Hameed Khan Memorial Trust, as a representative of Community Based Organizations and Mr. Rashid Mehmood, a representative of Civil Society Organizations (CSOs). Meetings of the elected members regularly took place on Skype. Ms. Fatima from the Bangladesh was the designated representative and she once went to Mopoto for a meeting but she was unable to make it to the Morocco meeting therefore Sumaira Gul was invited by Sanitation and Water for All's to Morocco for this meeting.

On the first two days of the event the steering committee meeting comprising 22 sessions was held while on the third day a retreat comprising two sessions was organized. The Steering Committee approved the minutes of its March 2018 meeting and the meeting's draft agenda.

Ms. Catarina de Albuquerque, SWA, Executive Chair and Steering Committee Chair welcomed the Steering Committee (SC) and tabled the report of the Executive Chair. She said that "On behalf of over 200 SWA partners, I would like to thank the Kingdom of Morocco for their welcome of the Steering Committee. The progress done in the country in the water, sanitation and hygiene sector has the potential to influence many other of our partner governments. We were already inspired by the key role played by Morocco during the important discussions held in Marrakesh during the COP22 last year. This Steering Committee meeting will be key to the future of SWA and I am confident that Morocco can make the most out of this partnership."

Ms. Catarina de Albuquerque also transmitted the regret of minister H.E. Madame Charafat Afailal, could

not join the meeting due to a conflict in her schedule and Abdeslam Ziyad made presentation about the state of WASH in the Kingdom of Morocco in her place.

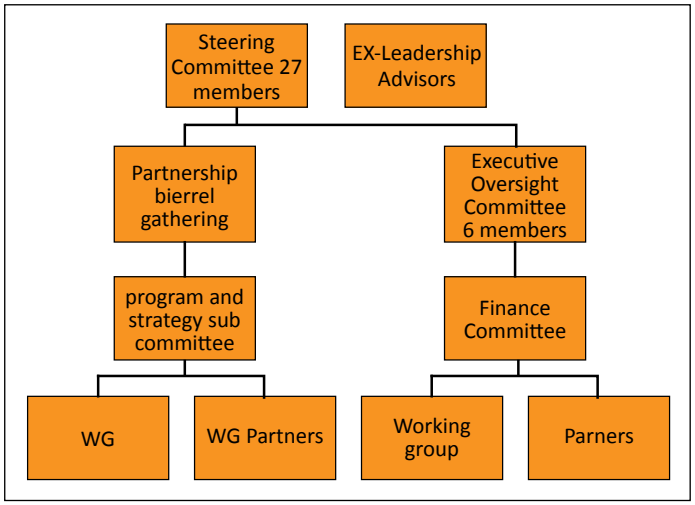
During her welcome address, Minister Afailal through a video message said, "The Kingdom of Morocco is proud to be the host of this important meeting. It is our belief that only through cooperation, at national, regional and global level, will we be able to reach universal access to water, sanitation and hygiene. Because of this, we are proud members of the SWA partnership and look forward to further and closer collaboration."

During Session 3, UNICEF representative shared the list of draft decisions document and document 5 which comprised of pending actions and decisions. Ms. Catarina de Albuquerque also shared that SWA will take an advisor from every Region and country (from a total of 61 countries). She updated the Steering Committee on the hiring process of Regional Advisors for the Secretariat, which will re-enforce country and regional work even further, as well as the Memorandum of Understandings the Secretariat will pursue with regional platforms. She apprised the audience in attendance that SWA would start choosing Advisors from accessible countries and they would be tasked with doing the Pilot Project on their country level which would then add value to the Steering Committee.

The Governing structure of the Steering Committee was also discussed in the meeting that there would be a total of 27 members who would take part in the voting process. Some would be honorary members. The details are as follows:

1. Chair and Vice Chair
2. CEO
3. Country and Regional Representatives
4. CSO and Network
5. External Support Partner
6. Representatives of the Private Sector
7. Regional Learning Organizations
8. Technical Experts (UNICEF, World Bank)
9. 2 Observers from Water Aid

Total No. of Members = 27



It was also announced that from World Bank, UNICEF etc. and CEO would not be able to take part in the Voting Process. Only one person out of the Co-Chair or Chair would be able to cast their votes and that too in case of a tie. The SC Secretariat Governing Structure was also discussed in the meeting. It was also clarified that the 27 members would be on top of the hierarchy of the Steering Committee. In the lower chain of command, there would be an Executive Oversight Committee which would consist of 6 members and the committees work under their directives, while Finance Committee and Progress Strategy Committee will cover working groups and partners.

Main issues discussed in SC Meeting

- As part of structure of the Steering Committee total number of SC members were finalized to be 27
- It was announced that senior and EX-members of SC would be Ambassador/Advisors who will get equal respect but they will be no longer part of the SC decision making process
- The steering committee will encourage regional network members as well as allow individual organizations to join the platform
- The alternate members would be preferred from other organizations and different countries for primary members seats
- Preferred language would be English and French but some flexibility was also announced and it was decided that interpreters would be provided during upcoming meetings
- SC member would be selected for a term of 03 years, but Chair and Co/Chair tenure would be limited only to 02 years

Progress

- During SC meeting, the details of partners & projects were also shared while the details of Trust fund that will be used for SC Secretariat and SC processes was also shared with the participants.
- It was decided that some pilot projects would be initiated for African countries
- SC also shared DFID and UNICEF initiated projects in Latin America
- The governance session consisted on human Resources by partners of SWA
- Guiding principles of SC were shared with the participants
- SC shared progress as per Sustainable development Goals and Millennium Development Goals 6.1-6.6

The SC Secretariat support to country engagement

- Create awareness and understanding of SWA framework
- Supporting partners will adopt SWA frame work into practices
- Profit produced in first round
- Fact able knowledge exchange between members and partners
- Mobilize and provide orientation to SWA partner countries and re-activate non-active partners

Partner Mapping

- The partner mapping was also shared with SC members
- The purpose & process of partner mapping showed that 115 partners were part of the coordination process and the mapping showed that out of 115 partners only 41 responded

Countries engagement

- 25 countries were engaged in the process including 2 each from a region for the review process in 2018
- Focal point process and responsibilities were also shared with the participants

Region wise representation for CSOs

- At the end of SC meeting the time line of the steps for representation of PM, FP, CSO, CPWG, HLMS as well as mutual accountability mechanism was finalized
- It was announced that the SC Secretariat will support country engagement
- It was also decided that timeline frame work on SC members will be devised
- Role of SWA Secretariat was also shared with the participants.
- The SC then went in detail through the changes to the Governance Document presented by the external consultant. The number of seats on the SC and its division among constituencies was discussed in detail before an agreement was reached.
- Most of the activities details would be shared by chair/co-chair Executive chair before the next SC meeting scheduled in September 2018
- The SC also elected Patrick Moriarty as interim Chair of the Steering Committee and Vanessa Dubois as its interim Vice-Chair and Ms. Catarina de Albuquerque, SWA, Executive Chair were elected through a voting process.
- On the third day of the event a retreat was organized which focused on two topics: (i) Country Engagement and (ii) Governance.

Country Engagement:

Steering Committee called for a strategic shift leading to the partnership investing more on country engagement. In December, 2016 the Steering Committee agreed on a common framework to reinforce commitment. The case studies conducted in 2017 provided significant insights on approaches that strengthened the country's governance processes. At the Retreat, the Steering Committee discussed the evolving nature of the partnership's country engagement, what can be done to strengthen it and mobilize partners around the Sanitation and Water for All partner's framework. The Steering Committee members, observers and guests took part in dynamic exercises to understand the challenges and to recognize opportunities on how partners can work together in different contexts. During the course of the meeting it was agreed upon that Sanitation and Water for All's country-led, coordinated, multi-stakeholder efforts should be strengthened to eliminate inequalities in access to water and sanitation. Together, they identified some steps which the partners and secretariat can take to strengthen country engagement in the entire process.

Governance:

In 2017, the Steering Committee undertook Governance review which concluded with recommendations affecting several aspects of the partnership. This retreat was therefore aimed at reviewing the proposed Governance guidelines and reaching a consensus among SC members.

Some important agenda points were: As per Sanitation and Water for All's country engagements, where are we?

What are we aiming at?

All the participants shared their experiences, feelings and achievements. Some of the participants had played important roles in their country achievements and engagements. At the end of the retreat day, conclusions were drawn and next steps that need to be taken were addressed. The co-chairperson shared the reflections from CPWG.

MALIK AMIN ASLAM ADVISOR TO PM ON CLIMATE CHANGE VISIT OF IRRC

Advisor to Prime Minister on climate change Malik Amin Aslam visited IRRC on 10 October 2018 along with UNHabitat team. IRRC is successful implemented idea by AHKMT which is processing 85% waste and catering the whole sector in Islamabad. He said government of Pakistan is focusing to adopt innovative models in Clean Green Pakistan Movement. For this purpose different embassies and donors would engage to support the model.

THE NEWS

14 CITY NEWS

Funds sought for Clean, Green Pakistan

Our correspondent

It's almost impossible for Pakistani government alone to successfully carry out the agenda of the Clean, Green Pakistan and therefore, we need international financial support for it, said adviser to PM on Climate Change Malik Amin Aslam Khan on Friday.

"We are asking the Foreign Office to include our green Pakistan vision as agenda item in the Pak-German deputy foreign ministerial meeting scheduled to be held next month to discuss future cooperation modalities in the arena of environment," he told German Ambassador Martin Kobler, who called on him here to discuss the matters of mutual interest related to environment.

Mr. Kobler said that last year he visited three sites of his own choice in KPK to observe the actual plantation made under one billion tsunami tree project and was happy to see that it was successfully implemented. Malik Amin said in Sector G-15 Islamabad, Akhtar Hameed Khan trust and UN-HABITAT has established a community-based, solid waste management unit which is catering to the need of the whole sector. "They collect the garbage and through recycling, utilize 85% and put rest of the 15% in the CDA dumps and they only charge Rs250 per month from each house. We are thinking to implement this community-based model to other parts of the country under our Clean Green Pakistan initiative," he said.

He said that it's nearly impossible for us alone to do such massive multibillion costing projects and therefore, we needed international financial support to successfully carry out the agenda of Clean Green Pakistan.

CHANGING MINDSET, BEHAVIOURS OF PEOPLE STRESSED

Adviser to Prime Minister on Climate Change **Malik Amin Aslam** inaugurated 'Clean and Green Pakistan' campaign here at Saidpur village on October 13, 2018.

Talking to media on the occasion, the adviser said it is a movement to make Pakistan clean and green through changing mindset and behaviours of people.

"**This movement reflects new Pakistan**," he added.
Malik Amin said Prime Minister Imran Khan is leading the campaign and there is strong political commitment behind this drive.

Naya Pakistan demands new way of thinking and this movement is a milestone in this regard, he added.

He said the drive would be funded by both the government as well as the donors.

Regarding waste disposal, the Adviser said the government was mulling over various models in this regard and finalize anyone soon.

He said the waste-to-energy projects were also under considerations and the government would execute the same through public-private partnership as discussion was already going on with German ambassador on the subject.

INTERNATIONAL

THE NEWS ON SUNDAY

CITY NEWS 19

Changing mindset, behaviours of people stressed

ISLAMABAD: Adviser to Prime Minister on Climate Change Malik Amin Aslam Khan distributing cash prizes to a student who secured top position in 'Clean Green Pakistan' art competition at Saidpur Village. — INP

Adviser to Prime Minister on Climate Change Malik Amin Aslam inaugurated 'Clean and Green Pakistan' campaign at Saidpur village here Saturday.

Talking to media on the occasion, the adviser said it is a movement to make Pakistan clean and green through changing mindset and behaviours of people.

"This movement reflects new Pakistan," he added.

Malik Amin said Prime Minister Imran Khan is leading the campaign and there is strong political commitment behind this drive.

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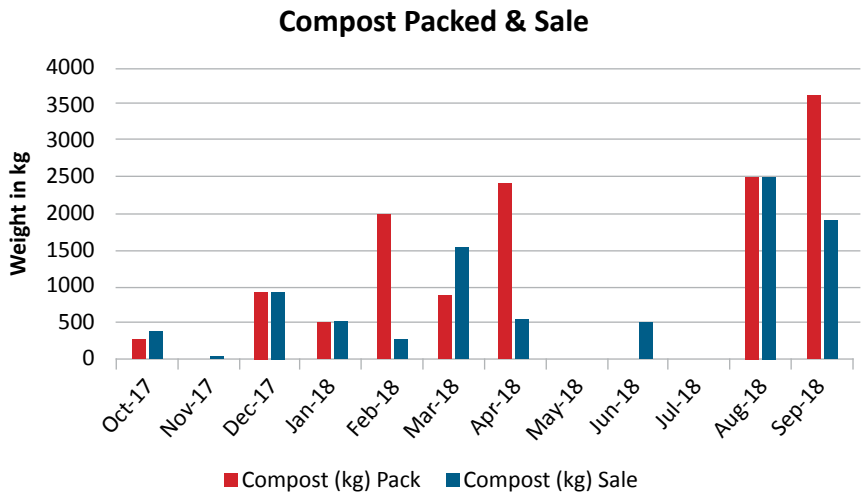
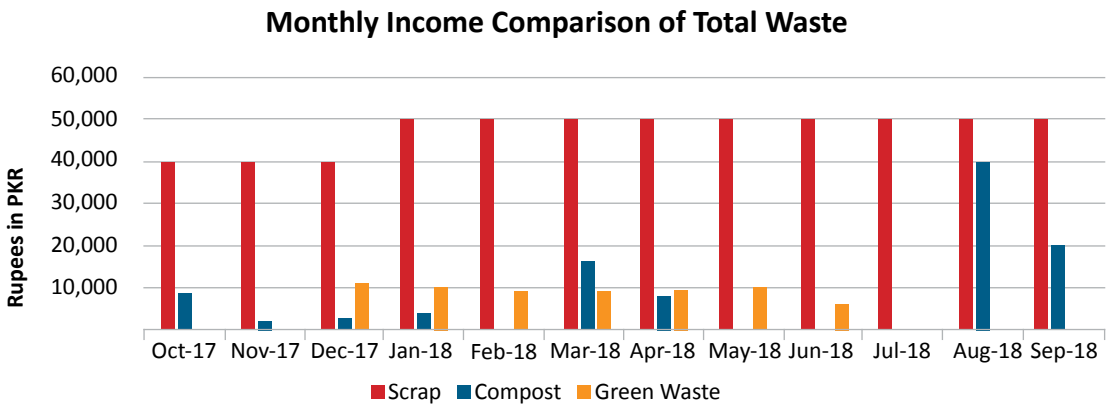
IRRC ANNUAL PROGRESS REPORT

IRRC Graphs for the Annual report

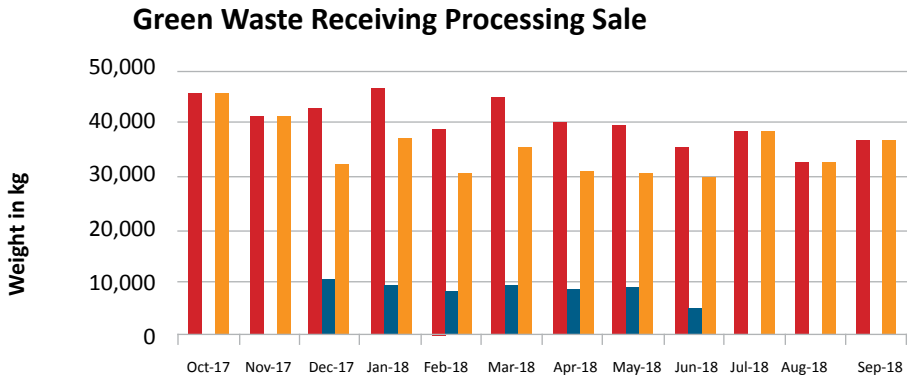


Here we are looking at the month-wise production and sale of compost, which as evident, varies in accordance with the season and the ground situation. Out of an average production of 1100 kilograms of compost produced every month, on average around 760 kilograms was sold during the period.

This graph shows the annual income generation through sale of total segregated waste within IRRC. The segregated waste comprises around 25% scrap and 60% green waste. Our data analysis showed that amount of money generated through sale of scrap stood at Rs. 570,000, while the sale of compost yielded a little over Rs. 100,000 whereas green waste was able to generate an income of Rs. 60,000.



Here is a breakup of the monthly income from the segregated waste. This graph shows how the sale of compost varies in accordance with seasonal ups and downs. During the plantation season, compost sells like a hot cake while on the other hand, when the plantation season ends, compost sale is low which is somewhat compensated though sale of green waste, which is used by cattle farmers as a fodder for their animals. According to estimates, around Rs. 47,500 is earned from sale of scrap, while Rs. 8500 is earned through sale of compost whereas on average green waste yielded around Rs. 5,000 on monthly basis.



	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18
Green Waste Received	45400	41200	42800	46600	38950	44800	39750	39450	35400	38500	32700	36800
Green Waste Sale	0	0	10500	9450	8500	9450	8750	9100	5450	0	0	0
Green Waste Composting Box	45400	41200	32300	37200	30450	35350	31000	30350	29950	38500	32700	36800

Here is a detailed comparison between the quantity of green waste received, sold and put in the composting box for compost production. On average 40,200 kilograms green waste is received per month, from which around 5100 kilograms green waste is sold to cattle farmers while the remaining 35,100 kilograms is utilized for the compost production.

VISITOR REMARKS ABOUT IRRC MODEL

J

I was involved in the initial environmental examination (IEE) of IRRC. Ms Sumaira did a wonderful job to establish this unique SWM zero waste unit at IRRC. We should create awareness among other organizations to initiate the zero waste models like IRRC all over the Pakistan.
| **Jamal Uddin Qureshi** |
Environmental Sciences, Teacher, IIUI.

B

We are going towards zero waste land. This is not waste, this is resource. This IRRC model is very knowledgeable for me and this is a very unique model to manage waste and they have given the name of their workers as e-guard, which is very appreciative. They are covering all the environmental factors in this model. Keep it up!
| Babar Abbas |
UET, Taxila

B

We all know that solid waste is a much underestimated area. People lack knowledge as well as their attitudes are not good. So it is very important to manage solid waste on scientific basis and IRRC took this great initiative and working on the zero waste land which is really good.
| Bibi Almas, PhD, Scholar |
Environmental Sciences Department, Fatima Jinnah Women University, Rawalpindi

K

Thank You for a truly impressive briefing on your work and achievements. I believe you have created some solutions to urban waste problems.
| Karen Janjua|
Program advisor, CWSA, Pakistan

S

Today we visited IRRC setup. The plant being run by the company seems wonderful. We truly appreciate what you are trying to do.
| Shahid Waran, Erum Saleem, Rashid Hussain|
NRSP, Hasilpur

Z

Today we visited IRRC which is playing an important role to make our environment clean and beautiful. The visit was heartened our belief that it will fulfill all the requirements of our program regarding waste management. We will like to establish such a center like our area as soon as possible.
| Zahidulla S/O Qari Iftikhar, Naila/Nazim|
Tehsil Oghi, Mansehra

M

Today I visited IRRC Islamabad. The plant run by NGO, Dr Akhtar Hameed Khan Memorial Trust is very wonderful.
| MPCHS, President |

S

I wish to congratulate IRRC on this great initiative. It is indeed need of the day. Solid waste management is a specialized area and need attention services to the communities. I would suggest scaling up this model in other sectors as well. More advocacies with Capital Development Authority are needed. Best wishes to Ms. Sumaira Gul and her team.
| Sadia Atta |

I

UNFPA
It is wonderful to see this amazing social entrepreneur. This is not only a profit aspect also a social and noble cause. Govt. of Pakistan should also learn a lesson from this enterprise and should implement this center throughout the country for clean and safe Pakistan.
| Imtiaz Akram|
CEO-IHP

F

It is really a nice experience to see such a wonderful innovative idea. This has really worked very well. The recycling process has benefited the green agriculture. I hope this IRRC will get more success in future as well.
| Fahad Liaquat|
CEO, AZM Foundation

S

One of the innovative and low cost model of waste management by AHKMT and this NGO is doing incredibly well, the way it was initiated in 2009 and till today. The scope is massive and increasing day-by-day. It has tremendous potential to be replicated having income generation as well. Need to be scaled up and to be adopted by the Government of Pakistan.
| Sara Mehmood|
Manager-Operation, AZM Foundation

P

One of the best models ever designed and implemented by IRRC to dispose of and utilize waste. As solid waste management is the most important issue in Pakistan. I hope to see the recycling of solid waste throughout Pakistan that will not only benefit the country in itself but also beneficial for the entire globe where people can live in a clean environment.
| Program Officer, AZM Foundation|

M

I visited IRRC plant and Mr. Hamidullah Khan briefed us about the whole process in an efficient manner. It was quite amazing to see how process of solid waste management is used for the recycling process. I am confident this approach of managing solid waste will also minimize the harsh impacts of climate change. Well done IRRC for not only saving the future of Pakistan but that of earth too.
| Muhammad Yousif|
Sr. Instructor, Agriculture Training Institute, Sakrand

R

I visited organic waste management plant IRRC. I was very impressed to see its process and production of organic fertilizer through composting. On one hand the organic materials have great value for soil fertility and on the other municipal waste could be managed efficiently.
| Rasool Bano|
Agri-extension, Hyderabad

M

Today I visited IRRC along with our technical team and chief officer Jatoi and observed that AHKMT is doing an excellent job in the field of solid waste management. The commitment of leadership and hard work of workers depicts that they are very committed to this cause. Their work has also inspired us towards the sustainability of this model.
| Mubarak Ali Sarwar|

R

We visited IRRC site with our team. It is quite an impressive idea for waste management and for the sustainable societies.
| Rai Zafar Iqbal|
Jatoi, Chief Officer

A

Great work, well managed center with every detail. Well thoughts though and the environment always in your minds, keep it up. Congratulations!
| Andres Hveso|

S

WATERAID
Impressed to see solid waste management practically happening in an effective and efficient manner in environment friendly way. Keep it up! Guys this is good work!
| Siddiq Ahmed Khan |
WATERAID

R

So happy to see the working of IRRC. Hopefully we can work together to establish more centers like that.
| Richard Gower |
Tearfund and PMS team

S

Well organized, maintained facility to manage the domestic waste.
| Saeed Pasha |
HSE consultant, MOL

F

Future environment of Pakistan will be sustainable. Bravo!
| Fatima Saeed|
KL-YES AWMNA

B

The project is contributing towards environment, promoting livelihood and income growth ratio to sustainability and self-reliance.
| Business Development Manager, PMS |

M

Initiative of exceptional importance. Please keep it up.
| Muhammad Irfan Tariq |
DG, E&CC

J

Excellent Facility.
| Javed Ali Khan |
Program Manager, UN-Habitat

B

State-of-the-art facility.
| Babar Abbas |
UET, Taxila

S

Excellent facility. Must be replicated.
| Sana Tahir |
Senior Environmentalist, NCPC

Students Comments:

A

The processes that the waste goes through and can be useful in many ways is the most eye-opening thing that I have noticed here at IRRC. We should take steps on our own because waste management is becoming one of the main issues that our country is facing. Our job is to spread their message and create awareness among people in our surroundings as well as our families as how we can make ourselves, our surroundings and most importantly our country clean.
| Ayesha Noor |
Bahria University, Islamabad

R

I am really impressed by the work they have been doing constantly for years. It is a great initiative and a great step towards the betterment of our country. As an individual, the thing we have to do is to start the process of waste management from our homes. Cleanliness does not mean that we clean our houses and throw waste away for the contamination of land that will ultimately inflict

harm to the environment and spread diseases as well. We need more set ups like IRRC for the betterment of our beloved country Pakistan.

| Ramsha Asif |
Bahria University, Islamabad

B

- IRRC is a very good approach to cater the SWM in an environmental friendly approach.
- Really commendable effort
- This initiative should be up-scale to achieve zero-waste.

| Bibi Almas |
PhD Scholar, Fatima Jinnah Women University, Rawalpindi.

A

IRRC being first integrated resource and recovery center in Pakistan is playing important role in waste management. This initiative will help citizens manage waste in an efficient way.

| Ayesha Mushtaq |
PhD Environmental Sciences, Fatima Jinnah Women University, Rawalpindi

S

Your Organization is doing a great job in SWM and it is also mitigating climate change issue. After visiting this IRRC I'm also thinking about building this kind of organization.

| Syed Farrukh Hussain |
IIUI

I

I am very happy by visiting your SWM plant. It is quite an impressive effort for the betterment and saving the environment and future generation. "Save environment Save Life" Best of luck!

| Ishtiaq Ahmed |
IIUI

A

Very informative plant about waste management in a very impressive way.

| Afraib Tariq |
IIUI

U

Visit was very informative. This was my first experience to visit a solid waste management plant. This organization is doing a very good job but this model should be replicated in other cities as well.

| Umer Rasheed |
IIUI

A

It is a good approach to make environment clean. It should be built in other sectors as well.

| Akash Arshad |
UET, Taxila

A

It is a good approach to achieve zero waste land and for environmental sustainability.

| Ali Raza |
UET, Taxila.

M

Your work at this level is highly appreciated. Keep it up for the betterment of Pakistan. IRRC initiative towards SWM and zero waste Pakistan is very good.

| M. Tahir Sajjad |
UET, Taxila

M

IRRC is multi-dimensional plant, which is working in a very efficient way. Personally, I like this plant and it must be appreciated and implemented in different cities of Pakistan. Whenever, I will have leisure time, I'll do this as volunteer. Wish you best of luck.

| M. Umar Ahsan |
UET, Taxila

Z

IRRC is a great setup because it is working on the most important problem of today like solid waste management. We will join this organization and implement some projects for the SWM in Sialkot and Gujranwala. Thanks to the organization for this great visit.

| Zain-ul-Abidin |
UET, Taxila

H

It is a great step taken by IRRC for solid waste management. This project should be on a large scale so that everyone can reap its benefits as solid waste which is usually not managed will easily be managed. More units of IRRC should be established in different areas for the proper management of waste.

| Hassnain Javed |
UET, Taxila.

S

I am really impressed by the level and the professionalism of this facility. Such facilities are needed for the betterment of environment in this region, Pakistan.

| Saud Daniyal |
UET, Taxila

A

This is a great incentive, I wish that it expands & flourish to its best and soon you start recycling by yourself without any external donor and the concept of zero waste comes to reality. Let's make Pakistan a green Pakistan, a clean Pakistan.

| Abeer |
UET, Taxila

A

This is a great setup and initiative towards the solid waste management. I think such kind of small setups should be installed in houses. As a nation we all should stand for a safe environment and green Pakistan.

| Aqsa Javed |
UET, Taxila

K

It is a great plant and initiative towards environment. More steps should be taken to save environment. Moreover I feel very happy after meeting with the higher authorities who helped in understanding the system in a better way.

| Kanwar Shahmeer Islam |
UET, Taxila

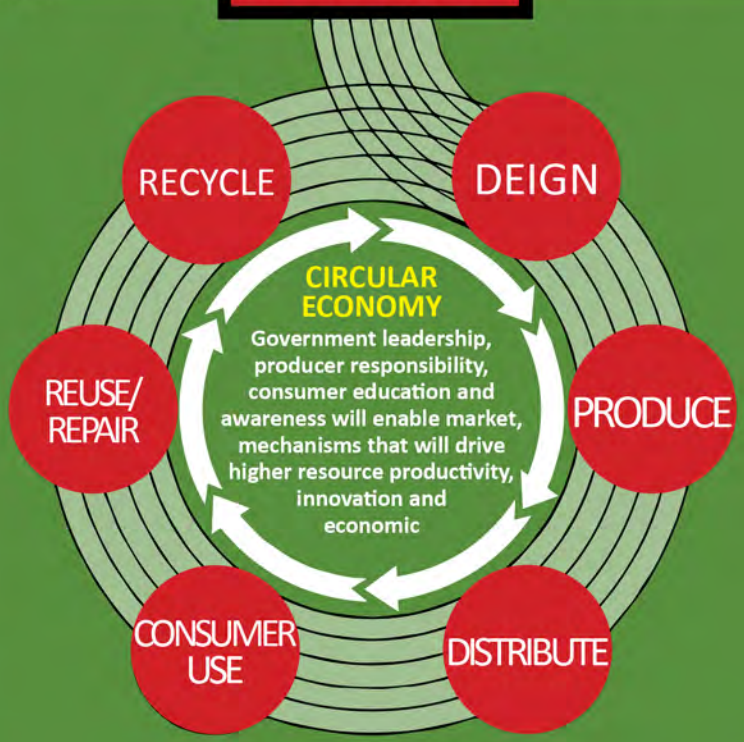





PAINTING COMPETITION IN MANSEHRA

CIRCULAR ECONOMY

A circular economy is an alternative to traditional linear economy (make, use, dispose) in which we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life.



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Integrated Resource Recovery Center

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