



UAE is Going Green, and many Companies are Turning Plastic into Fashionable Clothing

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ABSTRACT

Around 5,000 workers and more than 1,000 school children participated in a cleanup UAE campaign organized by the Municipality of Abu Dhabi City on December, 13, 2012. The campaign involved a number of events to encourage the protection of the environment. The initiative was conducted in collaboration with the Community Police and the Centre of Waste Management, Abu Dhabi. Dubai has mandatory green building rules. UAE encourages recycling to protect the environment and the animals from dying as they consume plastic bottles, and trash bags. Many companies in Dubai are making Fashionable clothing out of recycled materials. This study will explain what is going green, and what are the wasted materials that are being collected in the United Arab Emirates, and what is being recycled, and how companies and Fashion Designers are being creative and recycling plastic to produce fashionable clothing?

KEYWORDS: Waste, clean up, campaign, fashion, newspaper, plastic bottles, and Eco fashion

Introduction:

The municipalities in the United Arab Emirates are exerting their efforts in educating UAE nationals in the field of green buildings, and launched an awareness campaign under the slogan, 'Be Educated on Green Buildings'. Building officials at Dubai Municipality explained that while all government buildings have to start adapting environmentally sustainable measures by 2014, however it is optional for private buildings. Engineer Yousuf Abdullah, acting director of the Buildings Department, said on March, 14, 2013, that the awareness and educational programs designed by the department include a number of activities such as training courses, seminars, exhibitions, publications and advertisements in all means of media targeting all categories of the society from consultants, contractors, suppliers, manufactures and developers. The programs that were running since last January also contain special activities for the public and students. Seminars and exhibitions aimed at introduce the public to the methods and procedures of building their own houses in a sustainable way, as well as to encourage them towards the green building considering its environmental benefits," he said. The green building rules and specifications are now publicly available on Dubai Municipality's website. UAE residents urged to join Earth Hour. As millions of people around the world prepare for Earth Hour on March 23, 2013, Emirates Wildlife Society is calling on UAE residents to join in the movement and switch off all lights for one hour at (8:30 pm). "Turning off the lights is just the beginning; millions of people want to take action and see a sustainable future for our planet," Ida Tillisch, acting director general of Emirates Wildlife Society, said. People are also invited to participate in the 'I Will If You Will' challenge. Various prominent landmarks in the UAE are expected to participate in Earth Hour, including the Shaikh Zayed Grand Mosque and Al Qasba in Sharjah, among others, which will all go dark as a symbolic gesture. It is estimated that three million UAE residents participated in last year's Earth Hour.

Environmentalism (Going Green):

The definition of Environmentalism according to Wikipedia is a broad philosophy, ideology and a social movement regarding concerns for environmental conservation and improvement of the health of the environment, particularly as the measure for this health seeks to incorporate the concerns of non-human elements. Environmentalism advocates the preservation, restoration and/or improvement of the natural environment, and may be referred to as a movement to control pollution. Environmentalism is an attempt to balance relations between humans and the various natural systems on which they depend in such a way that all the components are accorded a proper degree of respect. Environmentalism and environmental concerns are often represented by the color green.

Scientists Adopting International Farming Methods:

Scientists have been able to revive abandoned farms in the Northern Emirates and Western Region through using international farming models and adapting it to the local environment. "In the Northern Emirates alone, the number of farms has fallen by 30 per cent in the last 10 years. The major challenges we have to address is the water scarcity,

water quality and the reduction of area under agriculture, and it has got from better to worse," said Dr Shoab Esmail, Halophyte Agronomist, International Centre for Biosaline Agriculture (ICBA) on March, 13, 2013. When the farms dry out, farm owners are given a subsidy to work on another farm — abandoning the old ones. In order to utilize farms to their maximum potential, scientists at ICBA have taken a different approach to find water and food security, and by adopting new technology and farming methods, local farmers will be able to save water by 20-30 per cent. These models have also been tested in cooperation with the Abu Dhabi Farmer Services Centre on three abandoned farms in the Western regions of Abu Dhabi, including Madinat Zayed, Mezaira'a and Ghayathi. "Instead of importing food grains, local farmers can use a combination of fresh, desalinated and sewage treated water. In this way, the farmers can locally produce their food grains and create a market for their cattle, such as meats and dairy products, instead of focusing only on crops," he said. According to the study issued by Dr Esmail, these abandoned farms have become productive in the last 18 months, and been saved by choosing a different crops and an efficient irrigation system. "Such a concept should be promoted in the UAE, not only through the Ministry of Environment but through all government departments as well. This method should also expand throughout the Gulf. We should all work under the umbrella of adaptation if we want to change the consequences and address the issues of climate change," said Dr Rashid Ahmad Bin Fahd, Minister of Environment and Water. Since climate change in the UAE have increased temperatures and, which is likely to lead to an increase in demand of water for crops, while the natural groundwater recharge is also reduced.

Desert Clean up:

Dubai leaves no stone unturned. Dubai authorities have implemented a series of measures to bring about a change in the mindset of residents and hold them responsible for their littering habit. "We carry a number of clean-up campaigns throughout the year but that is not enough, and residents should be aware that it is their responsibility to clean up after themselves when they go out camping," said Abdul Majeed Saifaie, Director of the Waste Management Department at Dubai Municipality, March, 13, 2013. Dubai municipality announced that 410 tons of waste had been collected from various desert areas of Dubai during a two-week desert clean-up drive that ended the first week of March, 2013. A total of 10,237 volunteers participated in the clean-up campaign and 35,185 bags were used to collect the waste. Saifaie said that the deserts play a vital role in conserving the UAE's wildlife and should be treated with respect. "Since last November, we started implementing new rules to encourage campers to respect the environment. Now they need permission to set up their camps if they intend to camp for more than a few weeks, and we have distributed pamphlets with tips on camping properly without hurting themselves or the environment," he said. It is a popular pastime for Emiratis to set up camp in desert areas during the cooler months from November to April. In view of environment protection concerns, Dubai Municipality has made it mandatory for long-term campers to register for a permit to do so, and charges a fee of 22 fills a week for each square meter of campsite, which is limited to 300 square

meters. The designated camping sites are in Wadi Al Amerdi, Wadi Al Shabak, Al Warqa, and Al Khawanej 2. Within the last year, designated barbecue areas were set up in camping sites, which also addresses the issue of safety. As campers used to leave their charcoal on the floor and other campers would accidentally step on it and get burned.

Animals Consuming Plastic bottles & Trash bags:

Although more people are now aware of environmental concerns, and make concerted efforts to separate waste so that it can be collected and recycled effectively, the problem still persists. 95 per cent of all plastic ever made is still on the planet today? Some kinds of plastic can take hundreds of years to biodegrade in a landfill. More than 45,000 tons of plastic finds its way into the ocean and is responsible for the deaths of millions of marine creatures including turtles every year. Nearly one in two camels dies from ingesting plastic, usually in the form of plastic bags, which find their way into the deserts from picnic bags and mounting piles of rubbish left by travelers. Eventually, they get calcified inside the camel's stomach, blocking the intestines, and causing the animal to suffer a painful death from starvation. As much as 60kg of calcified plastic has often been found inside a camel's carcass, showing how serious the problem is. The problem of plastic waste is particularly generated from drinking water bottles, and has increased over the years, with the UAE today counted among the highest consumers in the world, after the USA, Mexico and Italy.

Home-grown organic products get stamp of approval from UAE ministry

A traditional souk-style organic produce market opened in Dubai on January 22, 2013, boasting dozens of locally grown fruits and vegetables. Located at the Deira fish market, it is the first of many planned by the Ministry of Environment and Water. "Having this small market is a step to encourage and promote organic production in the UAE," said Dr Rashed Ahmad Bin Fahad, the Minister of Environment and Water. "This is a starting point and it should give confidence to the consumer in our procedure to give organic certification which is very important. This is a quest for us to spread it to other organic products like meat and dairy." The ministry currently organically certifies more than 27 farms, and aims to reach 100 before the end of next year. "Farmers are ready to start this culture," said Mansour Ibrahim Mansour, the ministry's director of agriculture development. "They are looking to produce healthy food. I started with eight farms and I reached 23 within two months." From organic cucumbers, carrots, tomatoes and cabbage to bell peppers, cauliflower, potatoes and leafy greens, Ahmed Fathy grows between five and eight tones a month on his farm in Al Khawanej. "We sell to Union Co-op, Baker and Spice and Greenheart," he said. "This is our first traditional market and it's important to have a presence here because it will improve the market for organic food." He grows 45 tones of organic produce a month on his two farms. "The brand is called Integrated Green Resources and similar markets will open in Global Village and Souk Al Bahar this year and in Sharjah and Abu Dhabi next year. "This souk is traditional and it has different customers than in supermarkets," said Mr. Mansour. "Locals come here, especially over the weekend, so we want them to know what organic is all about." The ministry visits certified farms twice a year to analyze their soil and check for pesticides. In the next few months, the market will be covered and air-conditioned. It will open on Fridays and Saturdays from 8am to 6pm. The government of Dubai wants to encourage farmers and give the UAE a competitive advantage."

Middle East Waste Summit:

The Emirates Recycling (CDW Division) plant has the capacity to convert more than three million tons of construction waste materials generated in Dubai annually into high quality reusable road and construction base aggregate. Speaking at the summit, Neil Roberts, CEO of Emirates Recycling LLC stressed that "reform needed to be taken by the construction industry in order to manage their waste more effectively, provide safer and more productive sites, consequently reducing their costs and demonstrating how economic advantages come with environmental consciousness." Although waste avoidance and recycling are essential, it is important to keep in mind that these processes alone are not sustainable and unless they are coupled with market acceptance and reuse. The construction industry has already taken a huge step towards sustainability with buildings being built to eco-friendly principles; recycled materials undoubtedly have a key part to play in delivering sustainable infrastructure and low energy buildings which are a way of the future.

Zenath Recycling & Waste Management:

Is one of the largest waste haulage companies in Dubai. It offers a wide range of waste management services in disposing waste from construction sites, Industrial houses, commercial establishments, shopping malls, hotels, educational institutes, and residential communities, etc. It transports general waste, non-hazardous waste, hazardous & industrial waste and medical waste to the landfills of Dubai Municipality. With its Japanese partner it has successfully constructed and commissioned the largest medical waste incinerator with the state-of-the-art technology for Dubai Municipality on June 10, 2009. The incinerator treats the most dangerous hazardous waste and controls the best emission during its operation. It is the largest vertical incinerator in the Middle East for treating the above mentioned waste. Zenath Group is also working on to bring the latest technology to the Middle East market with its partners from Japan such as Waste2Energy. J.S.A. Bukhari, Executive Director, Zenath Group, points out that "the contract for the Medical Waste incinerator was awarded successfully after stringent quality specifications laid down by Dubai Municipality on treating the waste and controlling the emission." Zenath Recycling & Waste Management also markets galvanized metal trolley bins of sizes 1.1 cubic meters, 2.5 cubic meters and 4.5 cubic meters, plastic trolleys, compactors and other equipment.

Turning scrap metal into steel:

Around 3,000 metric tons of waste metal per month is sent from the UAE to countries such as India, Oman, and Pakistan where demand for waste steel scrap is high. The British Metal Recycling Association (BMRA) estimates that close to 400 million tones of metal are recycled worldwide each year. This includes steel, aluminum and copper. Many companies are taking this business opportunity and starting to turn scraps of metal into steel. Another company that is also helping the environment is Bee'ah, which is Public Private Partnership (PPP) environmental company, which is founded in 2007, and operating in the Emirate of Sharjah. The primary mission of Bee'ah is to help transform Sharjah into a 'green' Emirate with sustainable environmental best practices, providing fully integrated environmental strategic solutions and services for commercial, industrial and residential groups. Recycled wood in the sustainable supply of timber to Dubai, and the world was the EEG chairperson Mr. David Bellamy OBE's topic for discussion on November 5, 2006. He emphasized on "The crucially important role of recycled wood, in the sustainable supply of timber to Dubai and the world"

Fashion made from recycled material:

As ministries are encouraging recycled and going green, designers are making statements on runway shows with their fashion that is created from recycled material. **The Fashion** designer and creative director Gary Harvey, collection was set out to prove that recycled clothing can be beautiful, innovative, and enchanting. The couture-inspired collection, which was shown at London Fashion Week back in 2007, had a variety of dresses made from garbage bags, and financial times news paper (Fig 1 & 2). Another example is the dress made from recycled cans, bottle tops, cardboard packaging, glass beads, and plastic bags. Rubbish fashion: Look stylish in recycled plastic (Fig 3). This was the headline for Gulf news, on March 16, 2013. Green is the new black! A stylish T-shirt made from plastic bottles, a trendy jacket that'll last for years. Companies are using waste plastic to create clothes, and in the process of helping to save the planet. Plastic pellets are converted to fibers and yarn that's made into clothing. The next time you are thirsty and grab a plastic bottle of water from the nearest supermarket shelf, you might want to think about what you are doing to the environment. These plastic bottles, which we apparently discard without a care, find their way to a landfill where they remain as trash, taking years to disintegrate. And that is exactly what worrying eco-campaigners are. The stats are alarming: According to a report by the World Wide Fund for Nature (WWF) around 1.5 million tons of plastic is used by the bottled water industry each year. That's a lot of bottles, a lot of landfill and a lot of plastic.

Fashion made from recycled material:

Dgrade Clothing, which is a UK-based not-for-profit organization dedicated to driving improvements in responsible and ethical business practices in global supply chains. This garment manufacturer that has set up a branch in Dubai hit upon a novel idea - to create clothes from plastic. "Dgrade works with recycled materials to make great clothes literally from rubbish, a process that has been recently pioneered by

knitting fabric with thread extruded from recycled plastic water bottles," says Kris Barber, the company's managing director, who had more than 20 years experience in the clothing business before he first came across plastic yarn. The resulting fiber rivals cotton in texture and feel. It also has a lot more benefits than cotton - it's more durable, tougher and is less prone to shrinkage - ideal for creating adventure, leisure and casual clothing.

Dgrade Designs:

This company produces and develops a range of clothes made of jersey, fleece, twill, and denims, using post-consumer plastic bottles. "50 per cent cotton, 50 per cent polyester" T-shirts can be made from three 500ml water bottles and cotton yarn," says Kris, proud his company is doing its bit for the environment. "Thirty such bottles go into the making of a pair of brushed twill park shorts, while a jacket would take between 40 and 60 bottles. "Our factories buy post-consumer plastic bottles recovered by recycling companies," Kris adds. "These are then shredded into flakes and heated and extruded through a spinnerette (something like a showerhead). When cooled the strands of plastic (polyester) are then crimped and re-shredded into fiber. In some cases this fiber is then blended with cotton and spun into yarn, then knitted and dyed to produce blended polyester/cotton or 100 per cent recycled polyester." Until recently such eco-friendly fabrics were hugely expensive. "However, with the price of cotton almost doubling in the recent past, our products have become more competitive and we now offer a real alternative to harvested cotton, without the environmental impact that cotton growing causes," Kris says. Cotton uses huge amounts of water and pesticides to produce, whereas the process Dgrade uses to convert plastic bottles to yarn and fabric uses 20 per cent less water, 50 per cent less energy and has 55 per cent less carbon emissions than producing conventional polyester. The yarn, made for the UK Company Green spun in China, is a viable and positive alternative to polyester, Kris adds. Dgrade today has an entire supply chain and produces clothing under the brand Dirtball and under license for Spiked. "We also use Green spun yarns to make clothing and accessories for some of the largest retailers and brands in the world including Tesco and Marks & Spencer," Kris says. "It's now possible to make pretty much any polyester-blended fabric using recycled plastic bottles and that means you can make everything - from T shirts to waterproof/ breathable jackets, shorts and even jeans." The company Dgrade based in Dubai is targeted at young sports enthusiasts. "We make clothes to order for all our commercial customers. Our clothes are worn by some of the best extreme sports athletes," Kris says. "We have recently had fashion shoots done in *alpha*. Magazine and expect to be seen on catwalks in the country this summer." Kris hopes fashion houses in the region will also jump onto the environmental bandwagon soon, to further the cause of awareness here. The material is as safe as cotton and jute as no chemicals are used in the production process. Another advantage of recycled materials is that the life span of recycled fabrics far exceeds that of conventional fabrics. The material does not go out of shape, is more durable than conventional fabrics, and is priced a mere 20 per cent above what one

would pay for regular cotton fabric. For example: A Dgrade T-shirt costs around Dh150.

Conclusion:

The municipalities in the United Arab Emirates are exerting their efforts in educating UAE nationals in the field of green buildings, and launched an awareness campaign under the slogan, 'Be Educated on Green Buildings'. The awareness is increasing among people, and millions of people around the world are preparing for Earth Hour on March 23, 2013. Emirates Wildlife Society is calling on UAE residents to join in the movement and switch off all lights for one hour (8:30 pm). "Turning off the lights is just the beginning; millions of people want to take action and see a sustainable future for our planet. Scientists have been able to revive abandoned farms in the Northern Emirates and Western Region through using international farming models and adapting it to the local environment. People are buying more organically grown products, and UAE is opening markets to encourage selling these products. Dubai authorities have implemented a series of measures to bring about a change in the mindset of residents and hold them responsible for their littering habit. Dubai municipality announced that 410 tons of waste had been collected from various desert areas of Dubai during a two-week desert clean-up drive that ended the first week of March, 2013. A total of 10,237 volunteers participated in the clean-up campaign and 35,185 bags were used to collect the waste. Camels in the desert are dying from consuming plastic bottles and trash bags left by the campers. UAE is counted among the biggest consumers in the world of plastic bottles after USA, Mexico, and Italy. Many companies tried to turn scraps of metals into steel, and save the environment, while others have manufactured T-shirts and clothing from plastic bottles. A good example is the company Dgrade Design, a UK company that has a branch in Dubai. Other Fashion Designers have created Couture Fashion in Fashion Weeks 2007 such as Gary Harvey, who created High Fashion from the Financial Times news papers, and Trash bags. Saving our environment, and going green is becoming the responsibility of every citizen, and UAE municipalities are trying their best to educate people, and help save the environment



Figure 1



Figure 2



Fig 3

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