

The documents below consider issues related to sustainable futures. Read them **both** in order to answer **all** the questions on the paper.

Document 1: adapted from *Wasteful initiatives: The power of upcycling in Africa*, an article written by Tapfuma Musewe. The author is an International Representative for Consultancy Africa and an external consultant for strategic research driven projects. The article was published in 2013 by Consultancy Africa, a research and consultancy company based in South Africa.

Recycling is well-known as a sustainable way of life. We collect old clothes, books, boxes, bottles, cans and other waste. We sort them and send them for processing to extract materials such as glass, metals and paper pulp. So we save resources and reduce the problem of waste disposal. Recycling can use less energy than processing and manufacturing raw materials and can reduce the waste piled up in dumps, buried in landfill sites or burnt. However, there is a more sustainable process that uses little or no energy or resources: upcycling. Upcycling uses old items like clothing, office appliances and furniture to produce new goods for use or sale, with no reprocessing or extraction of materials. Making waste items into something useful increases their value. Indeed, many people have successful upcycling businesses.

Upcycling has environmental benefits. If it is done professionally, some energy and resources may be used, but upcycling can also be done at home without either. Upcycling stops waste going to landfill sites which produce methane, a greenhouse gas. It also reduces the demand for newly-manufactured goods. Upcycling is becoming a popular pastime for people who enjoy arts and crafts. These factors make upcycling attractive in the face of Africa's environmental problems.

Africans have been upcycling for years. Ethiopians use old tyres to make the soles of their traditional "selate" and "barabasso" shoes. This inspired soleRebels, an Ethiopian brand, now popular internationally and known as the world's first Fairtrade green footwear firm. In South Africa, artisans (people who make a living from making things by hand) work with wire in new ways to create furniture, toys and other items. Richard Mandongwe is one such artisan who creates flowers using plastic bottles and wire.

Upcycling also helps communal memory and heritage. It can help preserve and give historical value to items that would otherwise be thrown away. Artlantique is a furniture company that repurposes West African fishing boats. It uses old fishing boats to make unique pieces of African furniture. The company provides jobs and brings teams of local craftspeople together to work, helping to create social and cultural links.

Upcycling is an exciting choice for producers and consumers who wish to be different. For these people, upcycling is trendy and fashionable. The WREN design is a South African range of bags made from organic and/or natural fabrics, such as paper packaging, coffee sacks and antique grain sacks. It has made an impact on the fashion world, featured in multiple magazines, blogs and websites as a new, trendy brand to look out for.

Upcycling is an easy way to make a difference and deserves the support of local communities. The number of African businesses upcycling for profit is increasing. However, people also economise by upcycling in their homes, schools and workplaces. Whether for profit or not, upcycling helps all Africans to recover valuable resources from waste and maintain Africa's environmental beauty. Therefore, upcycling is a much better alternative than recycling for Africans who are environmentally aware, who wish to preserve the history of used items and who wish to be fashionable.

Document 2: adapted from *Imagine a world without waste: it's possible with a circular economy*, an article written by Alicia Clegg, a freelance writer on business, management, people and ideas. The article was published in 2015 in the *sustainable business section* of The Guardian, a UK newspaper.

The circular economy may be the answer to sustainability. It would work better than recycling, which can use a lot of energy. Materials that have been mixed up or contaminated lose value and are expensive to recycle. Many goods and materials cannot be recycled and are just burnt or buried in landfill. In the circular economy, however, goods are returned to the manufacturer after use and not thrown away. They are designed to be long-lasting, easy to repair and reuse. They are easy to take to pieces and to upgrade or remake into items as good as, if not better than, the originals.

Some large companies such as Renault and Rolls-Royce already use circular processes because it makes commercial sense. Caterpillar, the heavy machinery manufacturer, has an operation – Cat Reman – which remanufactures engine parts to same-as-new condition and sells them under warranty at reduced prices. Dutch manufacturer MUD Jeans allows customers to rent instead of buy jeans, which it promises to repair and ultimately remake into new jeans. Another popular idea is that makers of household appliances, such as washing machines, could rent them out and charge customers per wash.

It is possible that people may be persuaded to think of clothing and washing machines as services and not possessions. However, companies will find it complicated to organise and keep track of the many goods they rent out. Companies will have more reason to invest in lasting design if they own their products forever, but you still need regulations to ensure materials are not just thrown away.

Businesses also use circular processes in their offices. For many years, photocopiers have been rented, not owned. However, according to waste prevention charity Wrap, hundreds of thousands of office chairs and desks are thrown away each year. Office specialist Rype opened in 2014. It offers to lease furniture on a “repair and replace” contract. Greg Lavery (CEO of Rype Office) says that, “With skill and well-designed recovery programmes, furniture can be repaired or remade as good-as-new, more cheaply and using much less energy and fewer materials”.

The circular economy is an attractive idea but it will not happen immediately. Making new products involves change. Designers and architects must widen their focus on the new and stylish to include the flexible and lasting. Manufacturers will make long-term income from renting but lose short-term profits. They will need support from banks to cover lost income from sales. Above all, for the circular economy to succeed, industry and governments must agree how to measure its environmental effects. Only then can the public be sure that industry is offering solutions to the planet’s problems and not just statistics that sound good.

Just as society has embraced recycling, we should now work towards a much more sustainable circular economy. Circular processes save energy, are inexpensive in the long-term and create less waste.

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