



Oxford Cambridge and RSA

Tuesday 19 January 2021 – Afternoon

Level 3 Cambridge Technical in Applied Science

05874 Unit 22: Global scientific information

INSERT



INSTRUCTIONS

- Do **not** send this Insert for marking. Keep it in the centre or recycle it.

INFORMATION FOR LEARNERS

- This document has **4** pages.

Pre-release research brief

You should carry out your own research on the themes given in this research brief. Your research will help you to prepare for your examination.

Your research is only for your own use. You must not bring your notes into the examination.

A clean copy of this research brief will be provided in the examination.

In your research you should consider the following themes.

Theme	Unit 22 specification reference
<ul style="list-style-type: none"> • Access issues raised by transmission • Advantages and disadvantages of using different types of information storage • Impacts on different stakeholders • Quality management of scientific information • UK legislation and regulation relating to the storage and use of information i.e. Information Commissioner's Office (ICO) codes of practice • Global information protection legislation and regulation, i.e. UNCRPD specifically recognises that access to information, communications and services, including the internet, is a human right 	<ul style="list-style-type: none"> • 1.4 • 1.5 • 2.2 • 2.3 • 3.1.1e • 3.2.4

The questions in Section A of the examination will require you to draw on the knowledge and understanding which you have gained while researching these themes.

Instructions:

Read the following two pages of information.

Carry out your own research on the themes given above.

Case study: Longsight SIA

Longsight SIA is a registered independent non-profit organisation which is funded by private donations and other grants that are bid for from commercial and government sources.

Longsight SIA aims to provide scientific impact assessments of the risks associated with the technologies linked to genetic engineering and examines claims about their potential benefits. In this way, Longsight SIA gives politicians and consumers the best available information on which to base their decisions.

Monitoring plant crop technologies in Africa

Africa is a drought prone continent. Drought leads to crop-failure, hunger and poverty. Climate change may worsen the problem. Insect pests and plant diseases also damage crops, such as bananas, and many farmers have few or no resources to control them.

The UN Food and Agriculture Organisation has identified biotechnology as a powerful tool for crop improvement. Several large multi-national companies have developed genetically modified (GM) crops with drought tolerance, and resistance to insects and plant diseases.

Very few African countries have allowed commercial planting of GM crops. Some have only permitted controlled trials. These trials are coordinated by research institutions in collaboration with local universities. Longsight SIA provides independent verification of the trial process.

Some aid agencies have recently been accused of spreading misinformation and fear about the effects of consuming GM crops. The debate and controversy surrounding GM crops has led to Longsight SIA's website receiving a lot of traffic. Some visitors to the Longsight SIA website have been critical of the design and layout of the website.

Longsight SIA's Data Manager is responsible for redesigning the website. To inform their decision-making they have been reading:

- about the principles of web accessibility (1)
- related articles from the United Nations (UN) Convention on the Rights of Persons with Disabilities
- the Information Commissioner's Office (ICO) codes of practice, to gain a better understanding of some of the keywords of data governance such as anonymisation, encryption, integrity, sharing, and transparency.

With so many claims and counter claims about GM technology and products, it is important that the data gathered by Longsight SIA is very high quality.

A Senior Manager at Longsight SIA is responsible for Quality Management of Data. Part of their role is to oversee the recruitment and training of local field research biologists who independently assess the impacts of GM crops in-situ. This involves verifying and recording data relating to crop growth and comparisons with control samples. Impacts on marginal species (the animals and plants surrounding the test sites) are also assessed. The data are collected in accordance with surveying and monitoring protocols. Researchers are required to take photographs to support their observations whenever possible. They are issued with digital cameras that have SD memory cards to store their images.

The researchers are generally recruited on short term contracts from local universities all over the African continent and this presents some access issues for data collection and transfer. The Senior Manager ensures that the training received by the scientists includes an awareness of the Cartagena Protocol on Biosafety. The researchers must pass an online test before receiving approval to carry out their work. Longsight SIA works with the appropriate authorities to secure the necessary permissions for the researchers to gain access to the test sites.

For several years a Longsight SIA field research biologist in Uganda has monitored a field trial of bananas genetically engineered to resist the plant disease, *Xanthomonas wilt*. Their assessments and those of others, have demonstrated the efficacy of the crop, and resulted in the government recently changing the law to allow farmers to grow these plants commercially.

You are recommended to use the following reference in addition to those of your own research:

(1) <https://www.w3.org/WAI/fundamentals/accessibility-intro/>

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