



FACT SHEET

RADIO PRODUCTION GUIDE

OUTREACH GUIDE

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# **ECOSYSTEM SERVICES: THE WEB OF LIFE**

SOUTH AFRICA

## INTRODUCTION

Life on Earth is an interconnected web, with all the different plants, animals, insects, elements (i.e. water, air and soil), and bacteria both contributing to and supported by the whole. Forests are the lungs of the planet, the ocean is its blood, and the soil is our planet's digestive system. The clouds, winds and ocean currents regulate the planet's climate, cycling water, rainfall and nutrients on the land to foster diverse habitats where insects and animals can thrive; the forests on land and tiny organisms called **plankton** in the sea produce the clean air that we breathe. In forests, the trees are connected through massive underground networks of **fungi** which break down waste and make nutrients available to other life forms. Life sustains itself and keeps in balance through all these different processes and relationships. People are also part of the web of life.

*'You must treat the Earth well. It was not given to you by your parents. It is loaned to you by your children'*, goes a saying that is common across many cultures. Traditional knowledge, wisdom and stories from ancient cultures

across Africa and around the world remind us of our interdependence within a larger web of life whose health is crucial to our own. In the modern world, however, the belief that we are in control of nature has made it possible for many of us to justify the damage we do to the Earth: cutting down forests, burning fossil fuels, dumping plastics and chemical pollution into the sea.

Climate change is just one of many symptoms of our interference with the Earth's life support systems. So many of the things we need but often take for granted are provided through the web of life: crop pollination, carbon storage, purification of the water and air, recycling of waste, flood control, pest control and disease control. When we interfere in the web of life, we disrupt very the relationships and processes that sustain us along with all the rest of life. We must start taking better care of nature, so that nature can take care of us.

## DEFINITIONS

**Ecosystems** (Also defined in 'Our Home the Earth') - are the relationships between living and non living things in a habitat: all the plants, insects, animals and other elements that work together to keep life going in that particular place. Forests, savannahs, river systems, coral reefs and coastal mangroves are all examples of ecosystems - and all these different ecosystems are connected in one gigantic ecosystem: the Earth ([Crash Course Kids: Food Webs](#)).

**A habitat** is a place where a particular species has adapted to live, finding the food, water, shelter and space it needs. All habitats are different: the Arctic is cold and covered in ice; many deserts are hot and dry; while a forest might be cool and rainy. Animals and other life

forms have adapted to living in their particular habitat, where they live in relation to all the other animals, living and non living things there. The removal of one single species can affect the entire habitat. ([Crash Course Kids: Habitat](#)).

**Biodiversity** is the variety of plant and animal life that exists in a particular habitat. Some ecosystems found in habitats such as coral reefs or rainforests are particularly rich in different species, all of which depend on one another and play an important role in keeping that ecosystem intact. It is extremely important that we protect these hotspots of biodiversity, which provide us with so many essential things in life: food, medicine, clean air and water, timber and much more ([Global Issues](#)).

**Pollination** - Most of the food we have to enjoy is thanks to crop pollination by insects whose populations globally are collapsing, due to habitat loss and chemical poisoning. The bees and the birds roam freely taking pollen from plant to plant, playing a vital role in plants' reproductive cycles as they spread the pollen produced by flowers of one plant to the reproductive organs of another plant, enabling the plant on the receiving end to produce fertile seeds ([World Atlas](#)).

**Water cycle** - Water has been cycling around the Earth continuously for more than 4 billion years: it evaporates from the oceans and lakes, and takes gaseous form within clouds drifting in the atmosphere. When the gas condenses back into water within the clouds, it rains. Rainfall on land collects in waterways and soaks through the soil to recharge the water table underground. Trees and forests also play an important role in regulating water cycles and preventing soil erosion and flood damage ([National Geographic](#), [FAO](#))

**Carbon cycle** - carbon dioxide is continuously being cycled through the atmosphere, oceans, land and organisms. Plants on land and in the oceans absorb carbon dioxide from the atmosphere and use it, together with sunlight, to produce their food. When animals eat the plants, or the plants decay or burn, the carbon dioxide they have been holding returns to the atmosphere. Forests, oceans and soils containing lots of carbon are known as carbon sinks, because they keep this carbon out of the atmosphere. This ongoing carbon cycle has provided us with a stable climate for thousands of years, but now humans are changing the carbon cycle because of all of the greenhouse gases we are producing, not only through pollution but through activities like deforestation which release carbon that is being stored. This is contributing to climate change ([NASA](#)).

**Food chain / food web** - through food, nature cycles energy and nutrients among different plants, insects, animals and microorganisms and keeps itself in balance. Plants make up the base of the food chain: bees use plant pollen to

produce their food; insects and herbivores eat grass and leaves; and predators eat the insects and herbivores, with large predators in turn eating smaller predators. Food chains are linear: for example, a cow eats grass, and you might eat the cow. But food chains exist within larger sets of relationships which are called food webs. From plant species to insects to apex predators, all organisms are connected through food webs, and the loss of a single species can affect entire ecosystems ([Crash Course Kids: Food Webs](#), [WWF](#)).

**Toxicity** - Pollution from industry, industrial farming, fossil fuels extraction and emissions, and chemical pollution all harm ecosystems. For example, agricultural pollution runs into rivers and coastal waterways, causing algal blooms that suffocate marine life. Our pollution, for example, the antibiotics used in factory farming, or the heavy metals used in processing textiles and producing electronics, also enters food webs and has devastating impacts for animals and humans alike. For example, when mercury is dumped in the oceans, it settles on the ocean floor and is consumed by phytoplankton, clams and other bottom-feeders, who then pass these toxins on to the fish and sea birds who eat them. These toxins accumulate and become more concentrated, the higher they move up the food chain. Many whales and dolphins have been found to have dangerously high levels of toxins in their bodies ([Science News](#), [See infographics](#)).

**Regeneration** - just as human activity can harm the biosphere, it can also help to restore natural ecosystems. Planting trees and native plants that provide food for pollinators, practising agroforestry and regenerative agriculture, cleaning up beaches and waterways, protecting fragile ecosystems, coastal waterways and mangroves, natural water harvesting and filtration methods, and reducing their own consumption and waste are all ways in which people can help to restore natural ecosystems.

**Floral kingdoms** are areas in which the plants are relatively similar.

**MYTH BUSTER****MYTH**

**Nature continues producing: it keeps on giving and doesn't need anything in return**

**FACT**

Nature can only provide for our needs if we take care not to overexploit her or interfere with her regenerative processes. Left alone to do their own thing, forests, wetlands, grasslands, and healthy soils provide many necessary things we often don't even think about - water filters through healthy soil and wetlands to be purified for us to drink and grow crops; trees fix nitrogen in the soil to enhance the growth of crops. In her memoir, 'Unbowed,' Wangari Maathai, a Kenyan environmentalist who won the Nobel Peace Prize in 2004, writes of learning about the hidden role that the fig trees, which were safeguarded by her community in the central Kenyan highlands, played in local ecosystems:

'I later learned that there was a connection between the fig tree's root system and the underground water reservoirs. The roots burrowed deep into the ground, breaking through the rocks beneath the surface soil and diving into the underground water table. The water traveled up along the roots until it hit a depression or weak place in the ground and gushed out as a spring. Indeed, wherever these trees stood, there were likely to be streams. The reverence the community had for the fig tree helped preserve the stream and that tadpoles that had so captivated me. The trees also held the soil together, reducing erosion and landslides. In such ways, without conscious or deliberate effort, these cultural and spiritual practices contributed to the conservation of biodiversity.'

**Living in harmony with nature means you are backward. Our cars and shopping malls are a sign of progress.**

Keeping the Earth's remaining ecosystems intact, and regenerating the ecosystems that have been degraded is one of our most important tasks as humans. We need to redefine our notions of progress: we all need to do our part to protect and restore the natural ecosystems we all depend on. There are lots of things that anyone can do - planting trees and gardens, growing food, supporting our local smallscale eco-farmers and entrepreneurs, avoiding single use plastics. All of these tiny incremental actions can add up to make a big difference when everybody takes part.

**There are so many different species of animals and plants in the world, so it shouldn't matter too much if we lose a few species to extinction here and there.**

Every single part of an ecosystem matters, because every species depends on everything else while making its own unique contributions within these systems. For example, **phytoplankton** in the sea not only absorb carbon but provide the base of the oceanic food chain. Coastal **mangroves** act as nurseries for natural fisheries and marine life, and also protect coastlines from erosion and storm damage. And Africa's iconic baobab trees are facing severe threats due to climate change.

**DID YOU KNOW? (GLOBAL)**

**A million plant and animal species are at risk of extinction** due to the deteriorating health of ecosystems around the world. Biodiversity loss is already having a huge **impact on human wellbeing**, for example by making us more **food and water insecure**

(IPBES 2019)

If you added up the monetary value of all the food, water, medicine and other **'services' provided by nature for free**, the total would amount to **\$33 trillion per year**

(IUCN)

Wetlands ecosystems have been most affected, and nearly 50% of them have been lost since 1900, resulting in the destruction of unique habitats and contributing to flooding, erosion and pollution around the world



(Nature, FLOW)

40% of insect species around the world are at risk of extinction. Without insects, 75% of the crops we grow could not reproduce



(World Economic Forum video)

According to one recent study, planting a trillion trees around the world, on land that is currently not used for crop production, could remove two-thirds of all the carbon emissions currently being produced by human activity

(Guardian)

Very high CO2 concentrations could change the ecosystems of the world irrevocably. If we increase CO2 to over a thousand parts per million, over the next fifty to sixty years, which we are quite capable of doing if we fail to reduce our dependence on fossil fuels, we could literally move the world back 20 to 30 million years in the space of a century. It is like moving ecosystems backwards in time at the speed of light.

The Cape Floral Kingdom is the smallest of the globe's six floral kingdoms, with a high number of species. Scientists recognise six distinctive plant kingdoms, and the Cape is home to the smallest one. The Cape Flora has a high density of species that occur nowhere else on Earth, so any impacts in the area have a disproportionate impact on species.



(sun.ac.za)

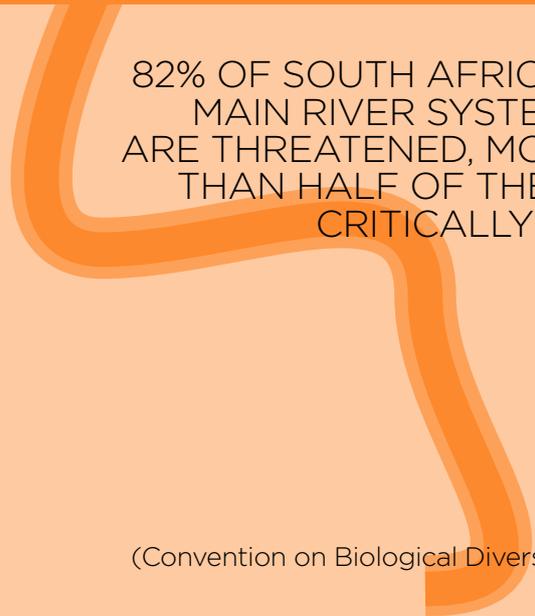
## DID YOU KNOW? (SOUTH AFRICA)

South Africa is the third most biodiverse country in the world, and is home to two internationally recognised biodiversity hotspots: the Succulent Karoo and the Cape Floral Kingdom



(WWF)

82% OF SOUTH AFRICA'S MAIN RIVER SYSTEMS ARE THREATENED, MORE THAN HALF OF THESE CRITICALLY SO



(Convention on Biological Diversity)

**More than 70% of South Africans are believed to use traditional medicinal plants as their primary source of medicine**



(Convention on Biological Diversity)

10% OF SOUTH AFRICA'S BIRDS AND FROGS, 20% OF ITS MAMMALS AND 13% OF ITS PLANTS ARE THREATENED



(Convention on Biological Diversity)

## TO GET YOU THINKING

**Cape's plants are dying out - and local authorities need your help!**

Almost 40 plant species have gone extinct in the Western Cape since 1900, making it one of the hot spots for plant extinction on the planet.

**A new study, published in the journal Nature Ecology and Evolution**, found that across the world about 600 trees, flowers, and fruit-bearing plants have died out since 1900, a rate of about three species a year. This is about 500 times higher than the background extinction rate - the natural rate at which plants would become extinct - scientists would expect. The researchers used data from the International Union for Conservation of Nature's red list of



### QUESTIONS TO CONSIDER

How does climate change affect biodiversity in the western cape floral kingdom?

Do you think it's important to take care of the different species of plant that exist in this area? Why do you think so?

Discuss the negative impact of global warming on the ecosystem of the Cape Floral Kingdom

threatened species, combined with records of plant species which had become threatened or gone extinct over the last three decades. In May, the **UN's** Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services predicted that **more than one million of all species** were threatened with extinction.

However, the new study is the first to look at how plants have fared since 1900. After Hawaii, where 79 species were lost, the Western Cape recorded the highest number of plant species lost, at 37.

The Cape Floral Kingdom is the smallest of the globe's six floral kingdoms, with a high number of species. Floral kingdoms are areas in which the plants are relatively similar. Scientists recognise six distinctive plant kingdoms, and the Cape is home to the smallest one. "The Cape Flora has a high density of species that occur nowhere else on Earth, so any impacts in the area have a disproportionate impact on species," explains Tony Rebelo, a scientist at **the South African National Biodiversity Institute (Sanbi)**.

Though the Cape Floral Kingdom accounts for only 0.6% of Africa's land area and 6% of the land area of South Africa, one in five of Africa's plant species and about half of South Africa's occur here, he says. "Of these, two-thirds of the species occur nowhere else on Earth."

These species are "the barometer of ecosystem health, and the high number of threatened species in the Littlest Kingdom on Earth, as the Cape Flora is known as, is a clarion call that we are heading for a serious environmental crisis," he says.

The extinction of these unique plants has a knock-on effect, as without their habitats, animals are also beginning to disappear. Rebelo says. "Fish and amphibians are particularly badly affected," Rebelo says. "We don't know about our insects and other goggas - we don't have enough data on most of them - but those that we do have data for, are also in dire straits."

**(Source: News24)**

# ECOSYSTEMS: THE WEB OF LIFE

## RADIO PRODUCTION GUIDE



### PREPARING FOR THE SHOW

#### ANGLES

#### DIFFERENT WAYS TO TALK ABOUT ECOSYSTEM SERVICES/ THE WEB OF LIFE IN SOUTH AFRICA

- When we reduce the biodiversity of an ecosystem we impact on the products and services that can accrue from that ecosystem for communities and in general.
- Global warming and increased CO2 levels can change the ecosystems of the world back to what they were 20-30million years ago. What are the dangers of this over simplification of ecosystems in a short space of time? How would this affect land, plants, animals and humans?
- Discuss the relationship between climate security, land use and ecosystem conservation
- How is climate change likely to impact the forest/flower/ocean ecosystems in South Africa?
- Discuss strategies that reduce the impact of climate change on forest/flower/ocean ecosystems in South Africa. Give examples from existing programmes

#### CHOOSE AN ANGLE

Discuss the relationship between climate security, land use and ecosystem conservation.

#### Ways to talk about: Discuss the relationship between climate security, land use and ecosystem conservation.

- Increased CO2 due to global warming and its effects on biodiversity of ecosystems
- Saving carbon: What role does carbon play in the sustainability story of ecosystems? Why is carbon rich soil important?
- The benefits of biodiversity on crop production for agriculture and forests.
- When farmers rely on nature for their livelihood
- Deforestation and the role of mass production. How are ecosystems harmed by the consumer needs of a global world?

**FORMATS****VOX POP****Vox pop aim**

To get many opinions on one topic.

**Who do you talk to?**

Anybody in the community.

**Question**

Do you think that climate change is a real problem in South Africa?

**AUDIO COMMENTARY****Audio commentary aim**

To get people's opinion about a topic that they care deeply about.

**Who do you talk to?**

- Any young people in your community
- Science, biology and geography teachers at local primary or high schools
- Ask a person who grows food or runs a farm to give their opinion on the attitudes of people in the community towards sustainable agriculture and farming practices.
- Speak to someone who can shed light on the ecological impact of city living (someone who is an expert in the topic of the local ecology/ecosystems/biodiversity)

**AUDIO PROFILE****Audio profile aim**

To get a first person account of someone's experience, passion or journey. Audio profiles often aim to inspire.

**Who do you talk to?**

- In terms of ecology, biodiversity and agriculture: Speak to a 'green activist' i.e. someone working towards access to healthy food for everyone.
- In terms of keeping our oceans plastic free: Speak to an activist or volunteer group that meets to clean up local beaches, and raise awareness about how important clean oceans are for ocean and human life.
- In terms of the fishing industry: Speak to someone who is an activist raising awareness about how big companies are destroying coral reefs with illegal (and sometimes legal) fishing practices that wipe out whole ecosystems and kill other species of sea life that are not targeted for fishing.
- An entrepreneur or company who is either selling a product or providing a service that is green conscious and has a specific positive impact on the environment
- What is the importance of respecting and maintaining a healthy ecosystem in any given place?
- Speak to a local expert in Biodiversity, Climate Change and Ecosystems studies

**Read more** about local communities growing their own gardens: <https://umthathi.org/umthathi-organic-gardens/>

**Questions**

- Describe the typical ecosystem services that a coral reef in the Atlantic Ocean provides to nearby communities.
- How is climate change likely to impact on this type of ecosystem in South Africa?
- What strategies have been adopted to reduce the impact of climate change on our oceans?
- Could you give an example of an existing program that is reducing these impacts?
- How do we assist communities in achieving food security?
- What is your philosophy on how to respect an ecosystem's natural cycle? Especially when there is such a huge power imbalance and humans are the ones who destroy the thing that they cannot live without?
- How is it possible for people to know where their food comes from when we live in cities and we associate food with supermarkets? How, in that context, do we raise awareness of our consumption behaviors from seed to plate?
- How do we raise awareness so that every step of the value chain is enrolled in the idea of cleaner methods of growing, producing, consuming products/foods? How do we connect to these processes when we are so disconnected to start with? Especially if you are not involved – on any scale - in producing and consuming your own food?
- How do modern farming methods (in agriculture, fishing or other), threaten the balance of multiple food webs and ecosystems in our communities?

**Please see interview questions in “How to present your show”**

**PUBLIC SERVICE ANNOUNCEMENT****The aim of a PSA**

To create a public awareness message. Create a PSA that raises awareness about the havoc that single use plastic bags create on sea life and our planet.



**Voice 1:** Hi Linda! Where are you going with all those shopping bags?!

**Voice 2:** Hello Mathapelo! Oh, I'm hosting a lunch for my sister's birthday. I still have to stop at one more shop to get more ingredients!

**Voice 1:** Ah birthday lunches are the best! Don't you want to use some of my re-usable shopping bags. I have enough to share. And you'll be doing the turtles a favour.

**Voice 2:** The turtles? Like the ninja turtles? What are you on about?

**Voice 1:** No, I mean the turtles that live in the ocean! Single use plastics, like the ones they sell at the check-out counter, are so bad for the environment. Specifically, the oceans! So many of them end up there, choking up turtles and other sea life who mistake it for food.

**Voice 1:** Oh no that's awful! And I love turtles! I had no idea. Please can I borrow you bags for today? I will never buy a single-use plastic bag again!

**Voice 2:** Until our manufacturers and producers start thinking about the end-life of their products, it's up to us, the consumer to think about how our behavior affects the planet.

**Slogan**

Of all the plastic made since the 1950's, half of it was made in just the past two decades. This is shocking! Let's inspire action for the future well-being of the oceans and generations to come. We can act now to make a difference. Refuse single use plastics!



## HOW TO PRESENT YOUR SHOW

Use your produced radio features, your research and the suggested script and questions to write your own script.

[INTRO:]

**Host 1:** It's just gone [TIME] and you're just in time for the [NAME OF SHOW] on [RADIO STATION]. My name is [NAME].

**Host 2:** That's right! And my name is [NAME], and for today's show we'll be talking all about ecosystems and cycles. What is an ecosystem you might wonder? Well simply put, an ecosystem is made up of the living and non-living things in a habitat. Mother nature loves balance, and is always working to keep things in balance so the flow of energy from the sun to plant to animals is constant. Today we'll be looking at the relationship between climate change, land use and biodiversity conservation and how they affect ecosystems, their natural cycles, and as a result their healthy balance. By looking at the connections between people, plants, animals and nature's cycles we'll explore what you can do to help ensure a more resilient ecosystem in South Africa, where people and nature can thrive.

**Host 1:** It's such an important topic! It really has gotten under my skin since doing all this research. And I hope it gets under yours as you listen to the show. Did you know that when ecosystems are damaged, the farmers are the first to suffer? And if smallholder farms are responsible for feeding billions of people worldwide, it makes no sense to harm the hand that feeds us!

**Host 2:** That's right! So, while we will be talking about the harmful impacts on ecosystems caused by humans, we will also explore some of the methods that can help farmers be more productive, while protecting the natural world that sustains them. But how do we do this? Stay tuned, we've got an incredible show in store for you with stories from local voices.

**Host 1:** I'm so excited! I agree with you 100%, this topic is a serious one, but I'm still excited to share and raise awareness about some very fundamental things we humans take for granted about the environments that sustain our lives.

**Host 2:** And yet humans are not behaving in a way that sustains our environments! What a crazy imbalance! Something I've loved learning about is the simple idea that farmers are actually "farmers of light". Yes! Farmers grow maize or rice or other fruit and vegetables. But what they do at the very beginning is prime the soil to catch the sunlight. The light energy transforms into bio chemical energy which gets into the soil. And that nourishing of the soil is what drives soil ecosystems to make nutrients available to grow all the food we consume!

**Host 1:** It's so fascinating! Ok let me see if I understand. So, to continue your thought: Carbon energy - which is found in all living things - gets transferred from the plant, to the animal that eats it, to the human that eats the animal. So, that energy keeps getting re-absorbed and used for energy to live and thrive.

**Host 2:** And then when humans die we go back into the earth and help nourish the soil for new growth once again! The circle of life! Hold on I'm having a Lion King moment here...

**Host 1:** The original or CGI version?

**Host 2:** No, the original obvs! Ok we're getting distracted. Basically, if you are a human being, and you live on planet earth, you need to listen to this show because ecosystems matter and we're about to tell you why!

**Host 1:** Let's hear more on what people think about climate change and ecosystems in South Africa.  
[BRIEFLY INTRO WHO IS BEING INTERVIEWED]  
[PLAY THE INTERVIEW]  
[PLAY VOX POPS]  
[PLAY AUDIO COMMENTARIES]

[OUTRO:]

**Host 1:** Today, we've learnt so much about ecosystems in South Africa and sustainable ways for all people to interact with the land that they grow food on! We've been talking a lot about climate

change. What we mean when we say climate change is that “circle of life” cycle getting out of balance. For thousands of years it’s been in balance. The atmosphere and the plants and soil and all the living creatures have been in balance with each other. But in modern times we have dug up and burnt fossil fuels and exposed soil for farming. We are now in a situation where we have to build back our soil diversity so that we can produce more plants and foods.

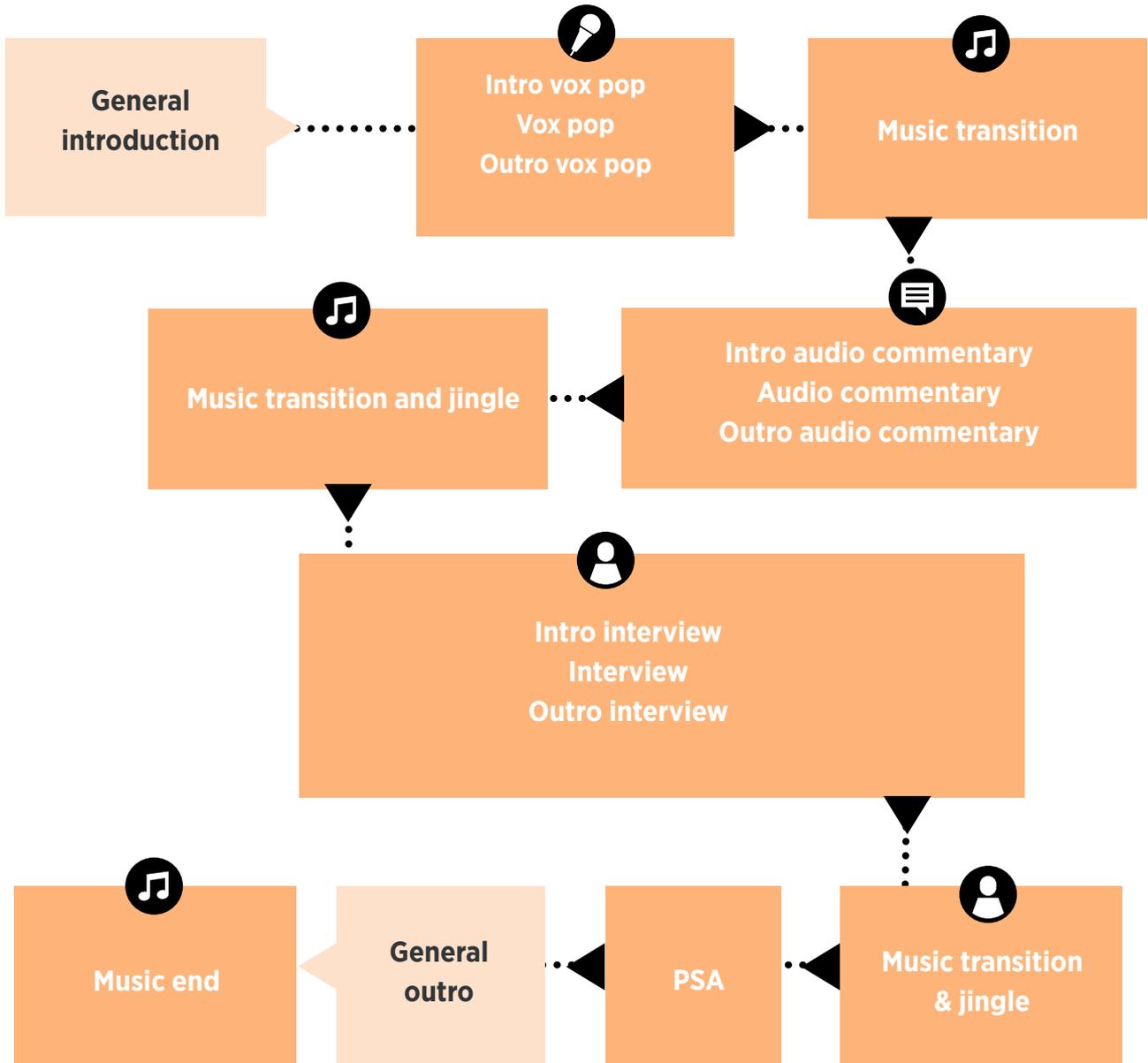
**Host 2:** Exactly! As we’ve heard from some of the interviews and commentaries, if we continue to heat the earth and the CO2 levels rise beyond 2 degrees, we will effectively transform ecosystems

back to what they were 20-30 million years ago, in the space of 100 years. That is just crazy!

**Host 1:** Anyone who says climate change isn’t real, please listen to my co-host! And listen to our next show as well! Because it’s time for us to sign off. Catch us next week on [DAY] at [TIME] where we’ll be talking all about [NEXT WEEK’S SHOW TOPIC]. Until then, it’s bye from us!

## SHOW OUTLINE

Full show on 'Ecosystems: The Web of Life' (1 hour)

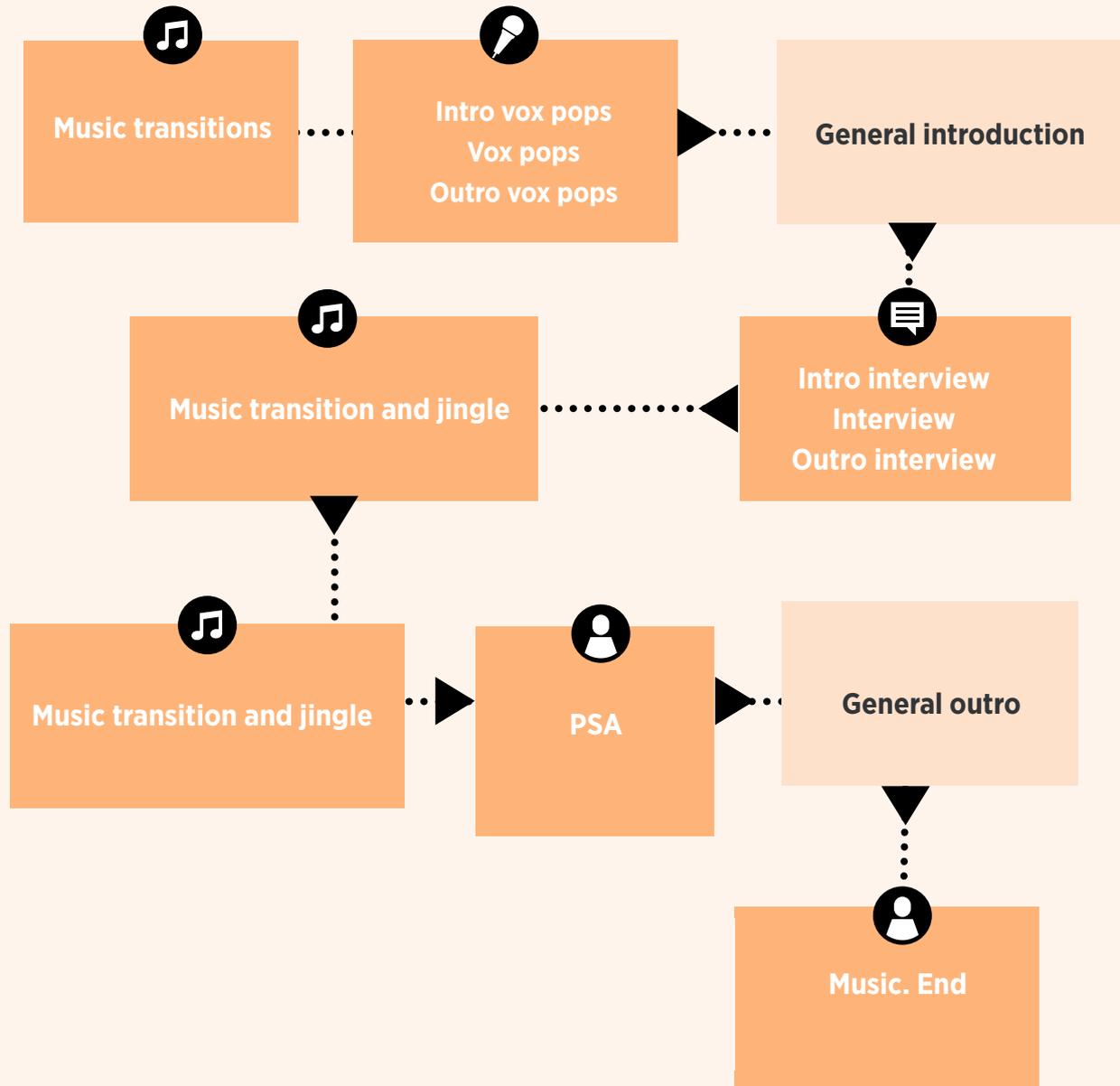


### ETHICS AND CONSENT

This may be a sensitive topic for some, so make sure you inform your audience to respect those who share personal stories in the space.

## SHOW OUTLINE

Green segment on topic of 'Ecosystems: The Web of Life' (10 minutes)



### ETHICS AND CONSENT

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# ECOSYSTEMS: THE WEB OF LIFE OUTREACH GUIDE



## PREPARING FOR THE SHOW

### ANGLES

#### DIFFERENT WAYS TO TALK ABOUT ECOSYSTEM SERVICES/ THE WEB OF LIFE IN SOUTH AFRICA

- When we reduce the biodiversity of an ecosystem we impact on the products and services that can accrue from that ecosystem for communities and in general.
- Global warming and increased CO<sub>2</sub> levels can change the ecosystems of the world back to what they were 20-30million years ago. What are the dangers of this over simplification of ecosystems in a short space of time? How would this affect land, plants, animals and humans?
- Discuss the relationship between climate security, land use and ecosystem conservation
- How is climate change likely to impact the forest/flower/ocean ecosystems in South Africa?
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### CHOOSE AN ANGLE

Discuss the relationship between climate security, land use and ecosystem conservation.

#### Ways to talk about: Discuss the relationship between climate security, land use and ecosystem conservation.

- Increased CO<sub>2</sub> due to global warming and its effects on biodiversity of ecosystems
- Saving carbon: What role does carbon play in the sustainability story of ecosystems? Why is carbon rich soil important?
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- When farmers rely on nature for their livelihood
- Deforestation and the role of mass production. How are ecosystems harmed by the consumer needs of a global world?

## OUTREACH FORMATS

We can use radio formats to create “Ecosystems: Web of life”. We suggest formats that encourage the voices of others and that get the listeners participating in the show.



### GUEST SPEAKER



#### Guest speaker aim

A guest speaker is someone who can share expert knowledge about the impact statement or tell a personal story related to the impact statement.

#### Who do you speak to?

Speak to a local expert in Biodiversity, Climate Change and Ecosystems studies

#### Some questions for the guest speaker to think about ahead of time

- How is it possible for people to know where their food comes from when we live in cities and we associate food with supermarkets? How, in that context, do we raise awareness of our consumption behaviors from seed to plate?
- How do we raise awareness so that every step of the value chain is enrolled in the idea of cleaner methods of growing, producing, consuming products/foods? How do we connect to these processes when we are so disconnected to start with? Especially if you are not involved – on any scale - in producing and consuming your own food?
- How do modern farming methods (in agriculture, fishing or other), threaten the balance of multiple food webs and ecosystems in our communities?



### INTERVIEW



#### Interview aim

An interview is a one-on-one conversation where questions are asked by the interviewer and answers are given by the interviewee.



#### Suggested questions for an interview with someone who is a local expert in Biodiversity, Climate Change and Ecosystems studies:

- Describe the typical ecosystem services that an ocean in South Africa provides to local communities.
- How is climate change likely to impact on the various ecosystems in South Africa?
- What strategies have been adopted to reduce the impact of climate change on local ecosystems?
- Could you give an example of an existing program that is reducing these impacts?
- How do we assist communities in achieving food security?
- What is your philosophy on how to respect an ecosystem’s natural cycle? Especially when there is such a huge power imbalance and humans are the ones who destroy the thing that they cannot live without?



### IMPACT JINGLE



#### Impact jingle aim

A jingle is a short song or tune that is easy to sing along to and remember, it has a clear message.

## FORMATS



### ROLEPLAY



#### Roleplay aim

To provide a scenario that allows the audience to “act out” a point about the impact statement. Decide how many characters are needed and set the scene for the “actors” to play out the statement. It is really an improvisation, and the audience “actors” make it up as they go along.

#### Characters

Nina and Xolani

#### Scenario

Nina is a mother and wife who farms a small piece of land where she lives in South Africa. She grows maize and rice, raises fish and also maintains beehives. The business she has created from selling these products has helped her contribute to the household costs she shares with her husband, Xolani, a local primary school teacher. If Xolani were to lose his job, Nina and her family would be 100% reliant on nature for their livelihood. Nina discusses the positives of their situation with her husband, but also highlights some concerns she has, given the way the erratic rainfall due to climate change has been complicating her farming practices.



### PANEL DISCUSSION



#### Panel discussion aim

A panel discussion involves a group of people discussing one topic in front of an audience. There is usually time for questions from the audience afterwards.



#### Who is on the panel

A smallholdings farmer someone works on a farm and understands the life cycle of the soil, a young person from the community (school going), an expert (teacher/lecturer in biodiversity)



#### Examples of opening questions for the panel:

- What is your own relationship with the Earth? Where is it extractive? Where is it regenerative? What are a couple of actions you can take to shift towards a more regenerative relationship?
- What is your attitude towards nature? Do you see nature simply as providing services to help humans get on with life? Or do you think nature has value in and of itself?
- Have there been experiences or memories in your own life that have taught you to value nature? What were they and how did you feel?
- Does your community have customs or beliefs that help to safeguard nature? What are these practices, and how are they followed in the community? Are such practices going strong, or in decline?
- What is the web of life in your own community? What are the relationships in nature that sustain your local environment? Where are these relationships fragile or under threat, and what makes them strong?

## FORMATS



### QUIZ



#### The aim of a Quiz

To test and reward your audience's knowledge on the topic

#### Things you need for this activity

- Prepared quiz questions and answers
- Small prizes



#### Process

Present some quiz questions and hand out prizes to those who answer correctly. From the fact-sheet, we created the two following quizzes for you to broadcast in your shows. Once you are done with these two, feel free to create more to put your listeners to the test!

#### Quiz 1:

**Question:** 82% of South Africa's ... are threatened, more than half of these critically so ([Convention on Biological Diversity](#))

- A. flower fields
- B. mountain forests
- C. main river systems

Correct answer is C

#### Quiz 2:

**Question:** More than 70% of South Africans are believed to use ... as their primary source of medicine ([Convention on Biological Diversity](#))

- A. insects
- B. traditional medicinal plants
- C. stardust

Correct answer is B

## HOW TO PRESENT YOUR OUTREACH



Use your outreach formats and your research to write your own script. Here is an example of part of a script. Use it as a guide to create your own script for your outreach activity.

[INTRO:]

**Host 1:** Hello and welcome to [NAME OF OUTREACH EVENT] at [NAME OF SCHOOL]. My name is [NAME] and I will be one of your hosts.

**Host 2:** That's right! And my name is [NAME], and for today's show we'll be talking all about ecosystems and cycles. What is an ecosystem you might wonder? Can anyone in the room tell me? [GIVE THE AUDIENCE A CHANCE TO RESPOND. GET OPINIONS FROM THREE OR FOUR PEOPLE IN THE ROOM. THINK OF IT AS A "LIVE" VOX POP]

Excellent! Thank you for your feedback. Well simply put, an ecosystem is made up of the living and non-living things in a habitat. Mother nature loves balance, and is always working to keep things in balance so the flow of energy from the sun to plant to animals is constant. Today we'll be looking at what happens when climate change and damaging farming and manufacturing processes harm ecosystems, their natural cycles, and as a result their healthy balance. We'll be looking at the connections between people, nature and farming and what you can do to help ensure a more resilient future for the ecosystems in South Africa, where people and nature can thrive.

**Host 1:** It's such an important topic! It really has gotten under my skin since doing all this research. And I hope it gets under yours as this conversation unfolds. Did you know that when ecosystems are damaged, the farmers are the first to suffer? And if smallholder farms are responsible for feeding billions of people worldwide, it makes no sense to harm the hand that feeds us!

**Host 2:** That's right! So, while we will be talking about the harmful impacts on ecosystems caused by humans, we will also explore some of the methods that can help farmers be more productive, while protecting the natural world that sustains them. But how do we do this? Does anyone have ideas about how?

[GIVE THE AUDIENCE A CHANCE TO RESPOND. GET OPINIONS FROM THREE OR FOUR PEOPLE IN THE ROOM. THINK OF IT AS A "LIVE" VOX POP] I'm loving your feedback! Stay in your seats, we've got an incredible show in store for you with stories from local maize, rice farmers, beekeepers and fish raisers. Let's listen to some of those voices right now. DJ, play my song please!  
[PLAY VOX POPS]

**Host 1:** Wow that was amazing! I'm so excited! I agree with these voices 100%. This topic is a serious one, but I'm still excited to share and raise awareness about some very fundamental things we humans take for granted about the environments that sustain our lives.

**Host 2:** And yet humans are not behaving in a way that sustains our environments! What a crazy imbalance! Something I've loved learning about is the simple idea that farmers are actually "farmers of light". Yes! Farmers grow maize or rice or other fruit and vegetables. But what they do at the very beginning is prime the soil to catch the sunlight. The light energy transforms into bio chemical energy which gets into the soil. And that nourishing of the soil is what drives soil ecosystems to make nutrients available to grow all the food we consume!

**Host 1:** It's so fascinating! Ok let me see if I understand. So, to continue your thought: Carbon energy - which is found in all living things - gets transferred from the plant, to the animal that eats it, to the human that eats the animal. So, that energy keeps getting re-absorbed and used for energy to live and thrive.

**Host 2:** And then when humans die we go back into the earth and help nourish the soil for new growth once again! The circle of life! Hold on I'm having a Lion King moment here...

**Host 1:** The original or CGI version?

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**Host 2:** No, the original for sure! Ok we're getting distracted. Basically, if you are a human being, and you live on planet earth you need to stay in the room for this hour, this conversation is for you because ecosystems matter and we're about to tell you why!

**Host 1:** Let's hear more on what people think about climate change and ecosystems in South Africa.  
[BRIEFLY INTRO WHO IS BEING INTERVIEWED]  
[PLAY THE INTERVIEW]  
[PLAY AUDIO COMMENTARIES]

[OUTRO:]

**Host 1:** Today, we've learnt so much about ecosystems in South Africa and sustainable ways for all people to interact with the land that they grow food on! And part of that is because of you! Thank you for your participation!

**Host 2:** We've been talking a lot about climate change. What we mean when we say climate change is that "circle of life" cycle getting out

of balance. For thousands of years it's been in balance. The atmosphere and the plants and soil and all the living creatures have been in balance with each other. But in modern times we have dug up and burnt fossil fuels and exposed soil for farming. We are now in a situation where we have to build back our soil diversity so that we can produce more plants and foods.

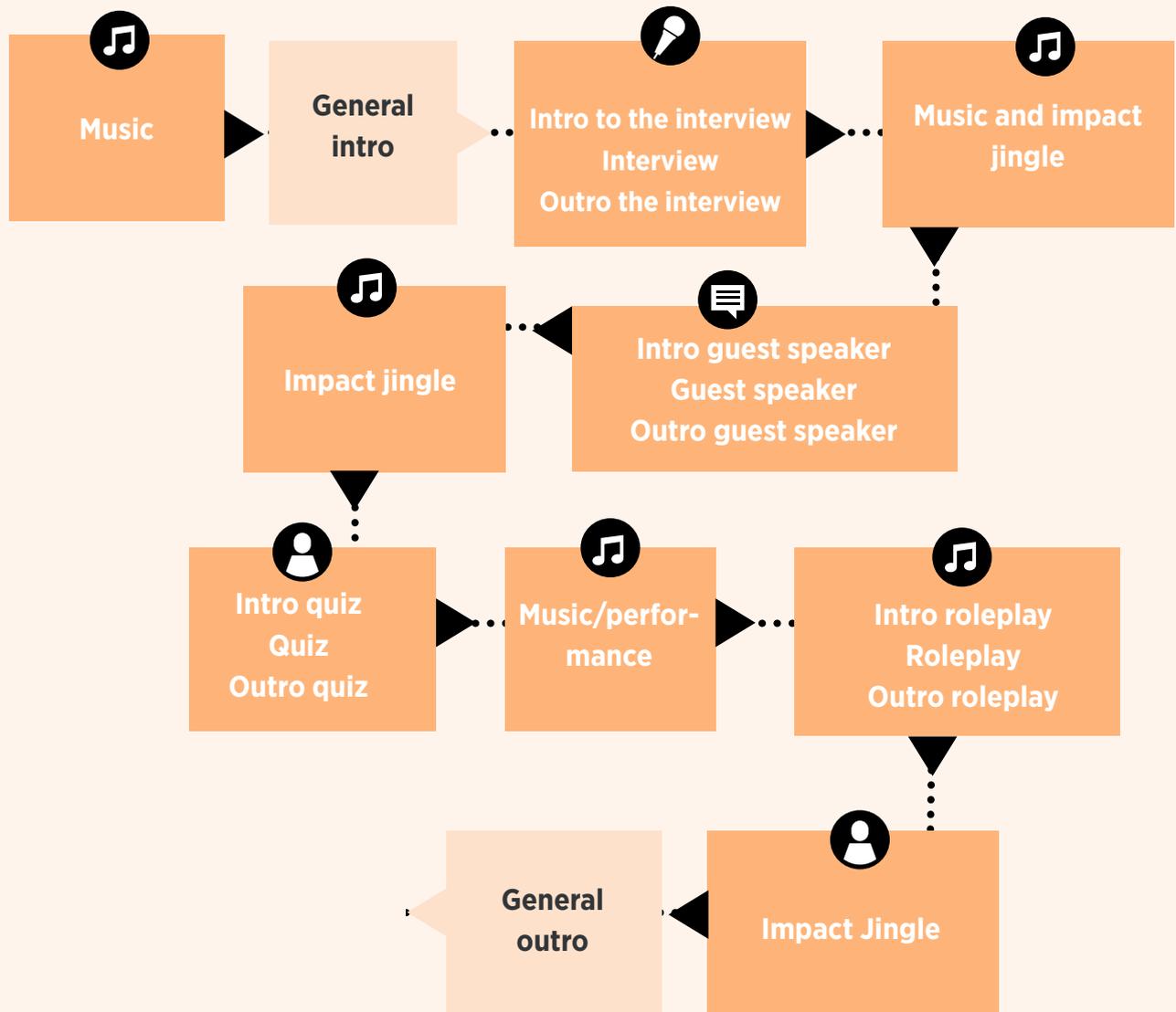
**Host 1:** I love what we've learnt about farming and harvesting light through the process of photosynthesis, changing light energy to biochemical energy and then biochemical energy becoming the plants and animals, through the carbon compounds that are made through that process. Farmers are ultimately light farmers!

**Host 2:** Green magicians! But now it's time to close the conversation until the next school visit! In the meant time, you can catch us on [NAME OF RADIO STATION], next week on [DAY] at [TIME] where we'll be talking all about [NEXT WEEK'S SHOW TOPIC]. Until then, it's bye from us!

## OUTREACH OUTLINE

An outreach plan helps you stay on track during your event. It is a list of the activities and the order in which they will happen in the outreach activity. Allocate a time to each item so that you keep to the time allocation of the outreach activity.

Below is an example of an outreach plan that is one hour long.



### ETHICS AND CONSENT

This may be a sensitive topic for some, so make sure you inform your audience to respect those who share personal stories in the space.

If any incorrect information comes up in any of your formats, like the quiz, roleplay or panel discussion, you must correct it. Don't let your audience leave with myths.

Once you've finalised your script, your performance artists, your outreach outline and prepared all your formats, it's time to start your live event! Enjoy!