DEVELOPMENT AND PROMOTION OF GREEN JOBS, AN OPPORTUNITY FOR PUBLIC EMPLOYMENT SERVICES

Conakry, 18 to 21 December 2023

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Recycling organic matter in agriculture through composting

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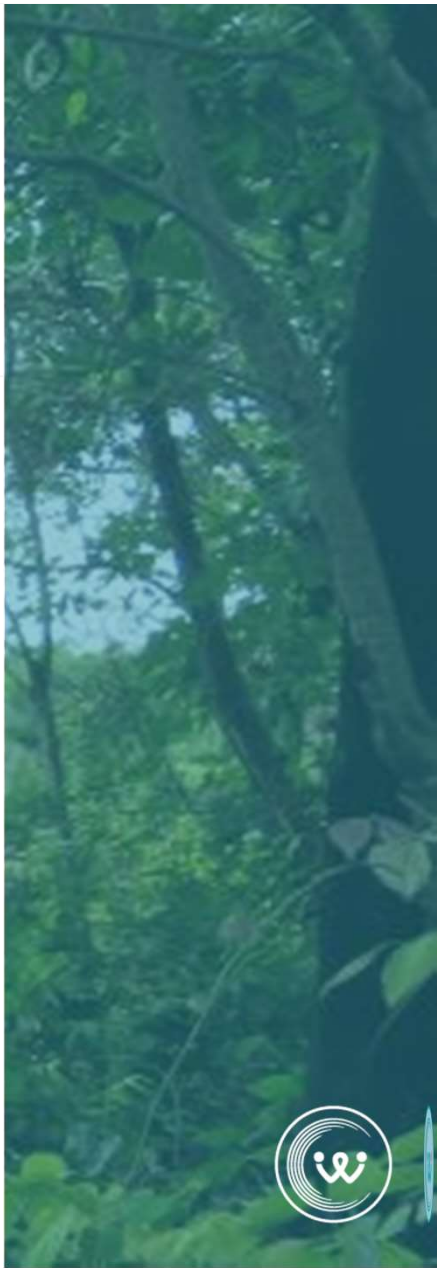


MINISTRY OF AGRICULTURE AND LIVESTOCK

NATIONAL DIRECTORATE FOR AGRICULTURE

Theme: "Recycling organic matter in agriculture through composting".

Presented by: CONDE Oumar

INTRODUCTION TO COMPOSTING

Context and issues

Every year, the Guinean government subsidises imported chemical fertilisers to an enormous amount, which is costly in terms of budget.

At the same time :

- the quality of agricultural soils is deteriorating, particularly due to a lack of organic matter, which reduces the effectiveness of these chemical fertilisers
- Waste management in Conakry costs the government between GNF 250,000 and GNF 500,000 per tonne, even though 50% of this waste is organic matter that could be used to improve Guinean soils.

General objective:

- Improving national sovereignty over soil improvers and fertilisers

Specific objectives:

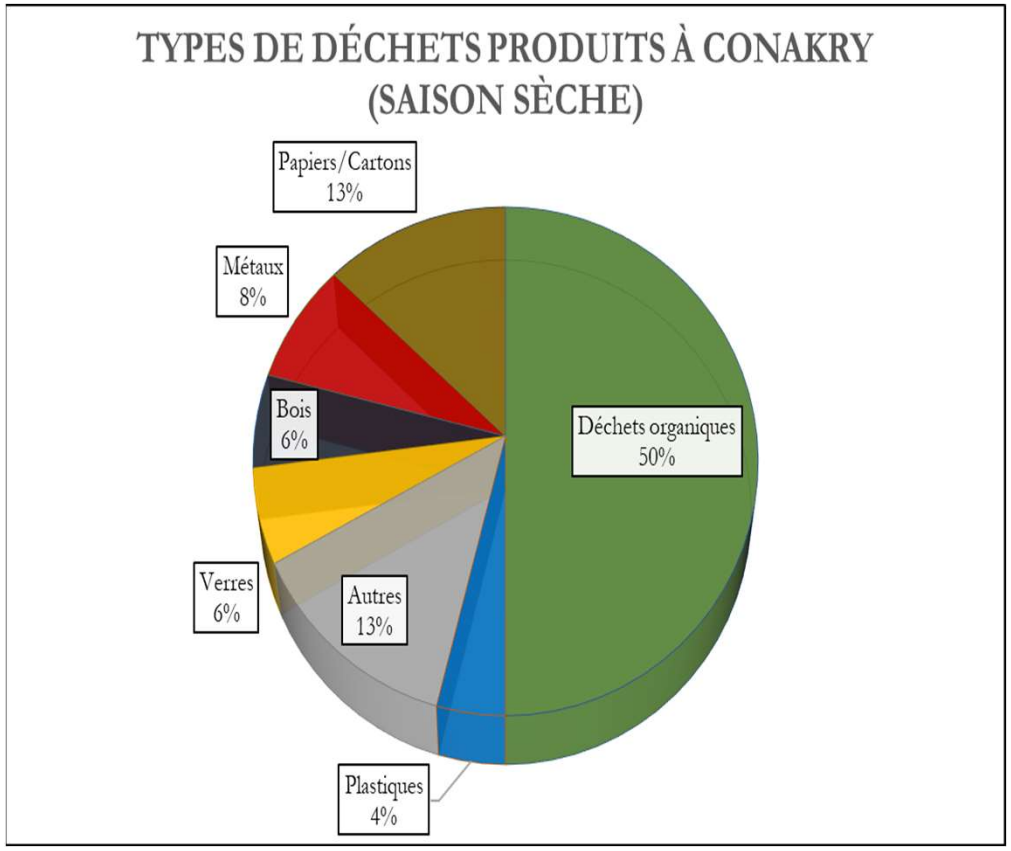
- Reducing chemical fertiliser imports and subsidies
- Improving the quality of Guinean agricultural soils (fertility, limiting the risk of erosion)

Importance:

- Availability of an input enabling the development of agricultural products such as "Organic Farming" or other environmental quality labels that promote exports.
- Reduction in solid waste treatment costs (cost of transferring and burying one tonne of waste between GNF 250,000 and GNF 500,000 per tonne in Conakry)
- Creating local jobs and a circular economy

Limiting methane emissions, a major contributor to global warming

ISSUES AND CONTEXT OF WASTE MANAGEMENT IN CONAKRY



A **1 hectare** → composting platform can process **10,000 tonnes** of waste per year

What is composting?

?

?

Definition

Composting:

Fermentation of certain urban or agricultural **wastes to recover** elements rich in minerals and organic matter, which are then incorporated into farmland to enrich it.

Conakry **1962 tonnes of waste/day** 50% organic matter High methane emissions, a 1 hectare composting platform can process 10,000 tonnes of waste/year

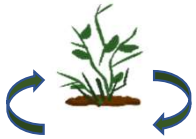
Controlled decomposition (temperature, oxygen, water) of ***raw organic materials into biologically stable humic substances***.

⇨ = **Compost**

General benefits

- Reduction in the volume of waste to be landfilled (by 40 to 50%)

- Lower transfer and landfill costs. Longer life of landfill, less leachate and lower treatment costs.



- Safeguarding and using the fertilising potential of organic matter. "Let's give back to the earth what belongs to the earth".

- A natural, low-cost process

- Reduction in greenhouse gases (CH_4)
- Methane has a Global Warming Potential (GWP) 35 x higher than CO_2

General benefits

- Job creation

- A novel innovation, through the semi-mechanisation of the waste treatment process (shredding, windrowing and turning), to raise awareness among producers of the need for an agro-ecological transition.

- Reducing waste and nuisance → Improving people's quality of life

Reduce greenhouse gas emissions from the methanogenesis of organic matter, which contribute negatively to climate change

Agronomic advantages

The addition of organic matter helps:

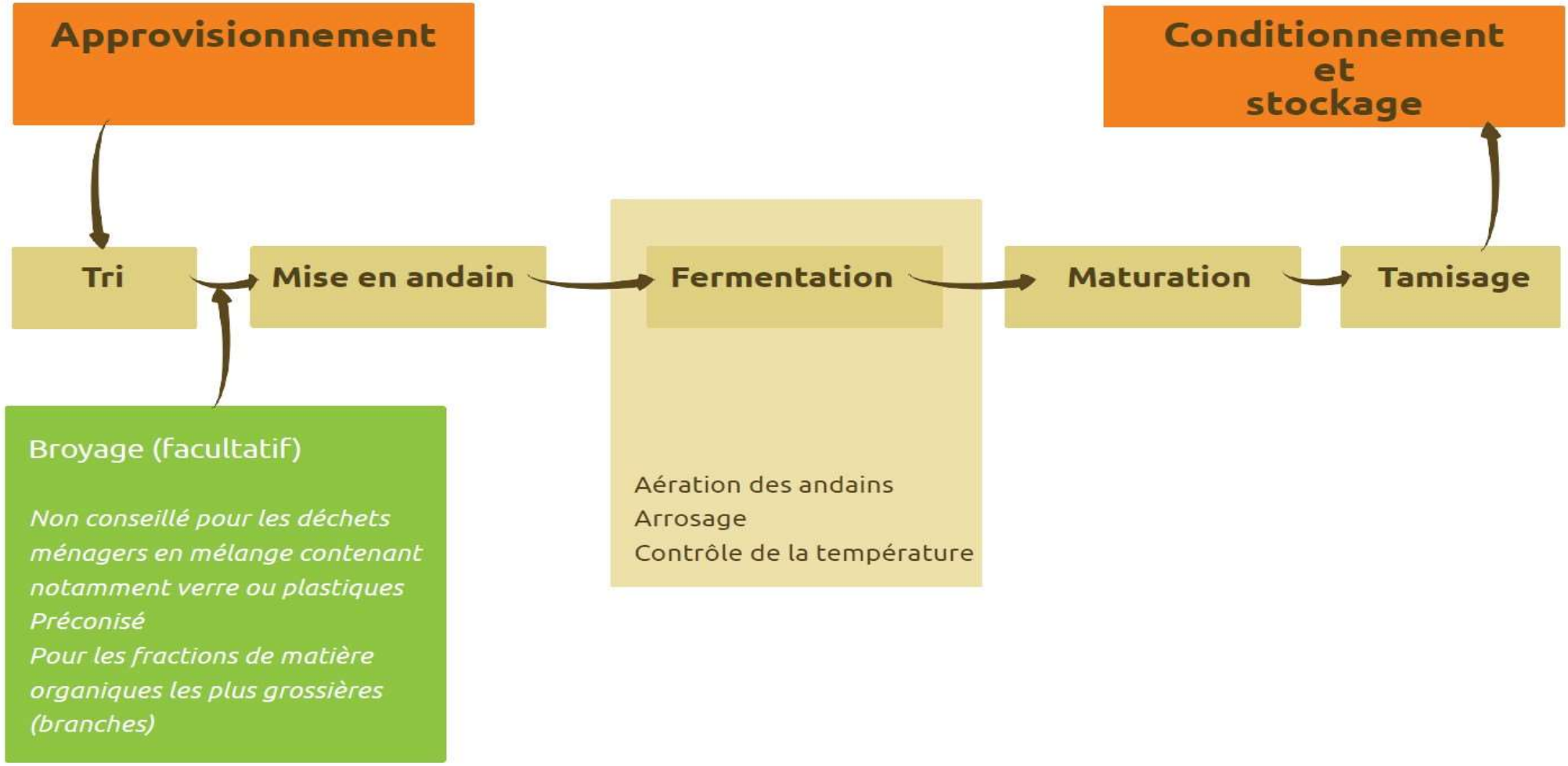
- Soil structure and porosity

- Water retention in soils

- Soil fertility

- Biodiversity

Composting process



Composting process

Transit and sorting area


Organic waste sorting


Shredding green waste and


Windrowing and watering


Windrow turning


Watering during turning


Mature swath


Weighing and bagging compost

ANALYSIS OF THE COMPOSTING SECTOR

ACQUIRED

1. Proven technical feasibility: it is possible to produce **quality compost** from household waste and market waste in Conakry (**90 tonnes of compost produced/day**).
2. Functional compost production infrastructure and equipment adapted to the sector's current level of development
3. Technical skills and specialised know-how in place
4. Growing demand for compost.

CHALLENGEs

1. Securing supply (quality/quantity): the most limiting factor in the business (structuring the deposit and transfer)
2. Build synergies of action between the various institutional and technical players (cross-sector channel)
3. Eliminate the large operating deficit of the platforms (only 10% of expenditure covered by sales)
4. Increase platform productivity.

Challenges to sustaining the business

1. Support from the authorities to improve production conditions :
2. Support from the authorities for the integration of compost into local technical itineraries
    - Setting up an extension and marketing system (including agronomic experiments)
    - Subsidy mechanism similar to that applied to chemical fertilisers (10%?)
    - Encouraging the use of Compost to be included in technical itineraries with a view to managing soil fertility.

FACTORS TO BE TAKEN INTO ACCOUNT FOR SUSTAINABILITY

- Composting cannot be profitable on the basis of product sales alone (a worldwide observation...)

Or :

- Achieving economic equilibrium in the long term is based on a financial mix consisting of financial compensation for the positive impacts of composting activities:

SUITE

-on agriculture (agronomic effectiveness of compost, soil restoration, agri-environmental quality labels such as "organic", etc.)
-on local waste management (reducing the tonnages to be landfilled and/or collected and therefore the treatment costs borne by the State or local authority)
-on the environment (GHG emissions avoided, generating carbon credits)
-On local job creation
-On national sovereignty in the production of soil improvers/fertilisers

Conditions for sustainability after 2023

- Carbon credit
  - Annual production of organic waste in Conakry = 358 065 t If 65% of this organic waste is "collected" = 232 742 t
    If 20% yield = production of 46 548 t of compost / year .
  - This avoids **16,291 t of CO2 equivalent**.

- The Sonfonia composting platform has the potential to produce 8,000 tonnes of incoming organic matter per year, equivalent to 560 tonnes of CO2 avoided.
- 29 composting platforms will be needed

ORGANIC MATTER SUPPLY AND COMPOST PRODUCTION OUTLOOK TO 2030

	2024	2025	2026
Incoming tonnage	2 000	4 000	8 000
Production target (tonnes of compost produced)	440	960	2080
Production costs	FG 904,500,000	1,900,000,000 FG	FG 3,800,000,000
Subsidy to be sought	FG 2,318,000,000	-	-

THE BUDGET: **FG 3,800,000,000**

Subsidy to be sought: **FG 2,318,000,000 or 61%.**

- Annual production of organic waste in Conakry=358065 t

The cost of landfill is: 89,516,250,000fg

- If 65% of this organic waste is "collected" = 232 742 t

If 20% yield = production of 46,548 t of compost / year .

- This avoids **16,291 t of CO2 equivalent**.


THANK YOU FOR YOUR
KIND ATTENTION

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