

GHANA

Republic of Ghana

Green Solutions 2026 Programme

Secure usable water, restore soils, produce more with less.



Strategic dossier - English version





Intervention thesis

A strong agricultural market, but too exposed to water stress and climate volatility.

01

Usable water

Hydro-retainers + targeted irrigation to reduce losses and secure young plantations.

02

Living soils

Fertilisers, biochar and biological activation to restore functional fertility.

03

Deployment

Fast pilots on cocoa, market gardening and productive reforestation, then value-chain scale-up.

Objective: turn climate vulnerability into a measurable agronomic advantage.



Ghana: executive reading

The indicators are enough to justify a pragmatic agricultural approach.

34.4 M

estimated population, 2024

20.7 %

agriculture in value added

227 533

km² of land area

62 %

Guinea Savannah zone

Reading: strong agricultural potential, high rainfall dependency, immediate interest in solutions that increase water retention and soil resilience.

Sources: Destatis 2024; Ghana MoFA Agriculture in Ghana Facts & Figures 2024.

The central risk: rain-fed agriculture

- Irregular seasons: the North concentrates severe drought episodes.
- Yield losses occur quickly when the soil's usable water reserve drops.
- The cost of inaction is not theoretical: it hits producers' cash flow.

Priority: secure the root before promising the harvest.



Where to intervene first

A simple segmentation, commercially usable.

**North: cereals, maize, sorghum,
drought vulnerability**

**Centre: transition, livestock, cashew,
reforestation**

**Forest South: cocoa, agroforestry,
regeneration**

**Peri-urban: market gardening, water,
short cycles**

Northern Ghana

Hydro-retainer + supplemental irrigation pilots to secure maize, sorghum and market gardening.

Cocoa belt

Soils, shade, biological control, moisture retention and lower transplant stress.

Peri-urban

Fast-rotation production around Accra, Kumasi and Tamale: rapid ROI visibility.

Productive reforestation

Paulownia, shade trees, valuable biomass and possible carbon-credit pathway.



Green Solutions portfolio

Five building blocks, one logic: save water, soil and time.

A

Hydro-retainers

Root-zone water retention, reduced watering, better plant establishment.

B

Marine fertility

Sea-water-derived fertilisers, mineral stimulation and water activation.

C

Bio-protection

Napema, beneficial nematodes, biological solutions against targeted pests.

D

Pyrolysis / biochar

Biomass valorisation, soil amendment, carbon potential.

E

Value-chain deployment

Cocoa, market gardening, reforestation, young plantations and dry zones.

F

Measurement & proof

Monitoring protocol: water, soil, yield, plant survival, gross margin.

Priority use case: cocoa & agroforestry

Cocoa is a showcase: living soils, shade, retained moisture and climate traceability.

Agronomic impact

Better plant establishment, water stability, reduced root stress.

Value-chain impact

Quality, sustainability and export narrative compatible with demanding buyers.

Carbon impact

Biomass, biochar and shade: a carbon option to assess, without overselling.



Peri-urban market gardening: the fastest ROI

- Short cycles: visible demonstration within a few weeks.
- Localized irrigation: every litre must produce.
- Ideal channel for distributors, cooperatives and pilot farms.

**It is not the most glamorous; it is the most bankable.
And sometimes banks like common sense.**

Hydro-retainers: root-zone effect

Create an available water reserve at the critical moment.



Function

Retain water near the root and limit losses through infiltration or evaporation.

Uses

Planting, transplanting, market gardening, trees, anti-drought strips.

Measurement

Plant survival, watering frequency, growth, yield and gross margin.

Fertilisers & water activation

A mineral and biological response, not snake oil painted green.

- Objective: stimulate the plant without harming the soil.
- A complementary approach to existing inputs, not initially a substitute.
- Comparative protocols: control, standard dose, reinforced dose.

Credibility is earned in the field, not in a brochure.





Bio-protection: Napema & biological control

Reduce pest pressure by strengthening system balance.

Positioning

Biological solution for identified targets; no universal promise.

Commercial targets

Market gardening, nurseries, high-value crops and export zones.

Success criterion

Field comparison: incidence, vigour, quality, cost per hectare.





Pyrolysis & biochar: turn residues into soil capital

Biochar does not replace agronomy; it makes it more durable when the protocol is well designed.

Inputs

Agricultural residues, biomass, by-products from local value chains.

Outputs

Biochar, heat, soil-amendment potential and carbon traceability.

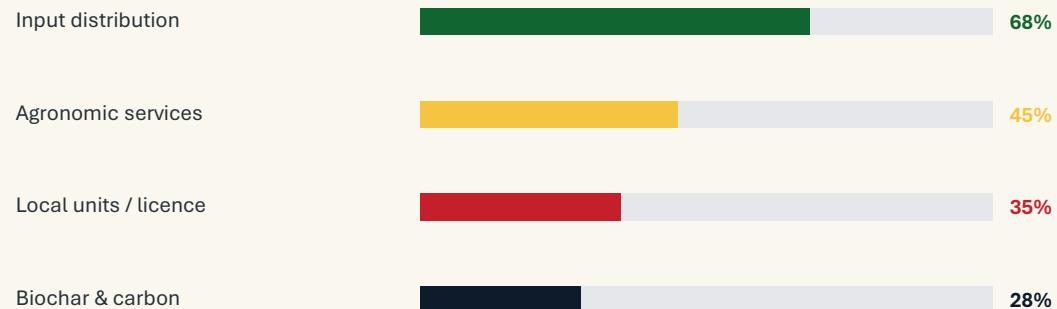
Condition

Quality, analysis, compliance and local market: no industrial romanticism.



Proposed business model

Enter through proof, sell through performance.



Phase 1

Import, test, document, sign the first distributors.

Phase 2

Assemble locally, train, sell through value chains and cooperatives.

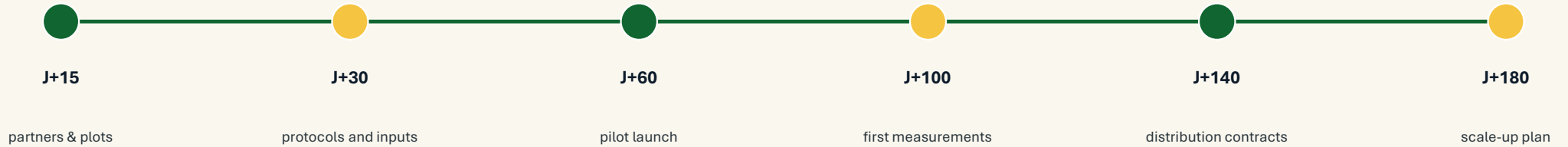
Phase 3

Industrialise selected blocks if volumes and margin are confirmed.



180-day roadmap

A schedule that forces decision, measurement and sales.



Management rule: no scale-up without controls, no promise without measurement, no stock without an outlet.



Partners to secure

Ghana requires strong local relays: agriculture, distribution, administration and finance.

1

Agronomy

Institutes, agronomists, universities, pilot farms and cooperatives.

2

Distribution

Importers, input networks, irrigation operators and agro-distributors.

3

Finance

Banks, donors, climate programmes, value-chain buyers and industrial players.

A good local partner is worth more than a bad 40-page contract. Even in perfect English.

Impact indicators

The project must speak both the field language and the investor language.

Water

watering frequency, survival, stress

Soil

organic matter, activity, structure

Yield

production, quality, avoided losses

Margin

cost/ha, revenue/ha, pilot return

Sustainability talk only has value if it converts into margin and resilience. The rest is green paint.



Risks and countermeasures

Caution is a strategy, not a brake.

Agronomic risk

Soil and crop variability. Countermeasure: control protocol + zone segmentation.

Regulatory risk

Approval, import, labelling. Countermeasure: local advice and compliance before volume.

Commercial risk

Overstocking or poor distribution. Countermeasure: pre-orders and pilot sales.

Reputational risk

Exaggerated promises. Countermeasure: speak numbers, limits and proof.

Recommended position: move fast, but do not skip the steps that protect the company.

Decisions to take

- Select 3 pilot value chains: cocoa, market gardening, reforestation/agroforestry.
- Identify 6 to 10 control plots, ideally across several zones.
- Sign a distribution partner before any significant import.
- Set up simple, impeccable agronomic reporting.

Sound decision: small pilot, high rigour, fast scale-up if the numbers speak.





Framework sources

Documents and data used to frame the dossier.

- World Bank Group – Ghana Country Profile / Climate Risk Country Profile.
- FAO Ghana – Climate resilience in Northern Ghana, early warning and anticipatory action, 2025.
- Government of Ghana – Updated Nationally Determined Contribution, 2021.
- Ghana Ministry of Food and Agriculture – Agriculture in Ghana, Facts & Figures 2024.
- Destatis – Ghana international statistics, 2024 indicators.
- Awuni et al., 2023 – Climate change mitigation and adaptation challenges in Ghana.



Note: public figures must be locally revalidated before contracting or investor communication.