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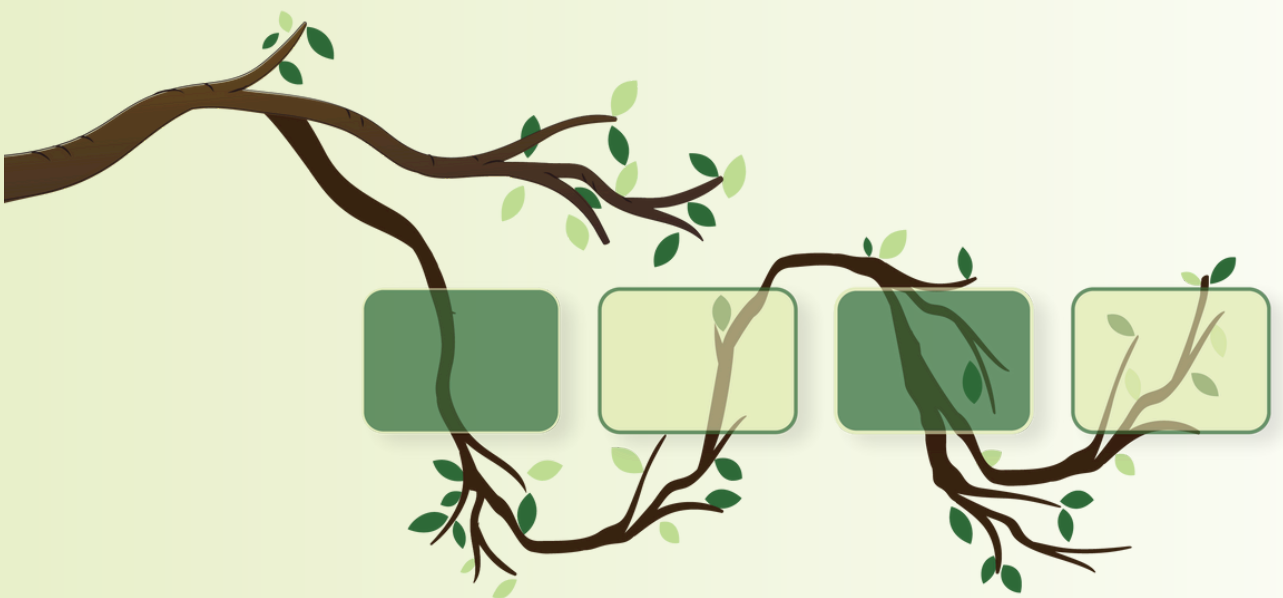
# Breeders' Associations

## Action Pathway towards New Genomic Techniques (NGTs)



Funded by the European Union

PRO CONSULTING

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# Executive Summary

The Breeders' Association Action Pathway is part of the GeneBEcon Transition Action Plan (TAP), which provides a strategic roadmap for supporting the responsible adoption of New Genomic Techniques (NGTs). This pathway empowers breeders to serve as informed communicators, foster trust across the agri-food value chain, and facilitate regulatory and market integration of NGTs, positioning them as key enablers of sustainable agriculture and innovation within the European bioeconomy.

## Why NGTs Matter

NGTs have the potential to:

- Enhance food quality and nutrition.
- Increase crop yields and resilience to climate change.
- Reduce pesticide and fertiliser usage.
- Lower greenhouse gas emissions.
- Promote circular bioeconomy solutions.

## The Need for a Transition Action Plan (TAP)

Despite their advantages, NGTs and NGT products face skepticism from consumers due to misinformation and fragmented regulatory landscapes. The change that the NGTs innovation brings needs to be better managed. The GeneBEcon project, with active stakeholder involvement, has worked to facilitate this change and improve public understanding.

## Transition Action Plan (TAP) Development

A structured, Responsible Research and Innovation (RRI) approach was used to develop the TAP across three phases:

- Mapping the NGT Landscape – Identified barriers and stakeholder needs.
- Co-developing SMART Actions – Created actionable, measurable strategies.
- Validating and Finalising TAPs – Developed tailored plans for six stakeholder groups.

## Transition Action Plans (TAPs)

Each TAP is an actionable pathway tailored to a key stakeholder group. Each pathway includes practical, specific and measurable strategy for awareness, education, collaboration, and communication, enabling a unified transition toward NGT desirability and integration.

Consumer Associations
National Policymakers
Breeder Associations
Farmer Associations
The Food Industry
NGO Associations

**To access all Transition Action Plans, please visit the link https://genebecon.eu/transition-action-plans-taps/**

## The Role of Breeders' Associations

Breeders are innovation drivers and trusted messengers in the effort of adopting and integrating NGT products and techniques in the agri-food value chain system. The Breeders' Associations TAP, structured into two key phases, is an action pathway, which includes:

- Awareness campaigns tailored to breeders and farmers.
- Visual communication tools, consumer education, and regulatory briefings.
- Journalist training and media engagement.
- Position papers on IP rights, "conventional-like NGTs," and economic analyses.
- Collaboration platforms and sustainability reporting.
- Contribution to an IPCC-style report on the future of agriculture and NGTs.

Each TAP action includes Specific, Measurable, Achievable, Relevant, and Time-bound (SMART) steps to ensure impact and accountability. The SMART actions can be adjusted by Breeders' Associations to fit their goals and own information strategy.

## Conclusion

This TAP equips Breeders' Associations with a practical, customizable pathway to promote NGTs responsibly and effectively. By fostering transparency, trust, and collaboration, breeders can accelerate the shift towards a sustainable, resilient, and science-informed European food system.

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# Section I. General: Introduction and methodology

# Why NGTs?

**New Genomic Techniques (NGTs): A Path to Sustainable Agriculture & Food Security**

**New Genomic Techniques (NGTs) are modern breeding methods** that allow scientists to precisely edit the genetic material of plants and other organisms to improve their traits. Unlike traditional breeding, which relies on crossbreeding and takes many years to develop improved crops, NGTs can speed up the process by making targeted, natural-like modifications. Unlike transgenic genetically modified organisms (GMOs), NGT-derived products do not carry transgenes. This helps develop crops that are more resistant to pests and diseases, require fewer chemicals, and are better suited to climate change, making food production more sustainable, efficient, and secure. Nevertheless, the NGTs method is one of the many tools used for breeding.

**A Smarter Approach to Agriculture** 🌱

New Genomic Techniques (NGTs) provide precise genetic improvements that can boost crop yields, enhance resistance to pests and diseases, and reduce reliance on chemical inputs. Unlike traditional breeding, NGTs allow targeted modifications that support climate-resilient, resource-efficient, and sustainable farming. As Europe transitions to a bio-based economy, NGTs offer a way to secure food production while minimizing environmental impact.

**Better Food for Consumers** 🥦

NGTs can improve food quality, sustainability, and affordability by increasing nutritional value and reducing the need for chemical treatments. Research from GeneBEcon shows that while public awareness of NGTs is still low, **consumers become more open to NGT-derived products when given clear, science-based information**[1]. This highlights the key role of consumer associations in bridging the information gap and ensuring informed choices.

**Benefits for a Sustainable Food System** 🌍

✅ **Farmers & Breeders:** Stronger crops, reduced pesticide and fertilizer use, and higher yields for more resilient farming in less breeding time.

✅ **Food Industry:** Longer shelf life, better product quality, and more efficient resource use, supporting a circular bioeconomy.

✅ **Consumers:** Access to healthier, sustainable food choices with reduced environmental impact.

To fully unlock the potential of NGTs, industry, policymakers, and the public shall align efforts to ensure these innovations are accessible, appropriately-regulated, reliably and widely accepted. With transparency and trust, NGTs can help shape a more sustainable, resilient, and efficient food system for the future.

1 https://genebecon.eu/wp-content/uploads/2024/10/GeneBEcon_Deliverable1.2.pdf

# Advantages and Challenges

**NNGTs: Unlocking a More Sustainable & Resilient Food System**

🔹 **What are the benefits of NGTs?**

New Genomic Techniques (NGTs) offer a range of benefits for agriculture, the food industry, and consumers:

✅ Healthier & More Nutritious Crops – NGTs can improve the nutritional quality of food, making it more beneficial for consumers.

✅ Less Dependence on Chemicals – By making crops naturally more fertilizer efficient, or resistant to pests and diseases, NGTs reduce the need for pesticides, lowering agriculture's environmental footprint.

✅ Faster Adaptation to Climate Change – Plant breeding can take years, the NGTs may help plants to better respond to changing climate conditions and thus enhancing food production.

✅ Lower Greenhouse Gas Emissions – Reducing chemical inputs and improving resource efficiency can help cut emissions from farming, supporting EU climate goals.

✅ Higher yields – Increasing pest and disease resistance can contribute to increasing yields by reducing yield loss. For example, the virus resistant potato developed by GeneBEcon.

✅ Conserve biodiversity - Environmental benefits by enabling gene drives to control invasive species or disease vectors and providing tools to restore endangered species.

🔹 **Why is consumer desirability and acceptance important?**

Consumers stand to benefit from healthier and tastier food choices, better food security, and more sustainable production. However, studies from the GeneBEcon project show that many people are unfamiliar with NGTs or mistakenly associate them with traditional GMOs. Key concerns include:

🛑 Lack of Awareness – Without clear information, consumers may not understand the benefits of NGTs. In the GeneBEcon consumer survey, an explanatory video enabled consumer understanding.

🛑 Misinformation & Trust Issues – Skepticism remains high, partly due to misunderstandings about genetic modification.

🛑 Ethical & Safety Concerns – While scientific studies confirm the safety of NGTs, people need transparent communication and clear regulations to feel confident about them.

🛑 Regulatory Gridlock in the EU – Divided voting behaviour among EU countries for risk management makes it difficult for NGT products to reach the market.

🔹 **What needs to be done?**

🌍 Enabling regulations – Regulatory hurdles and uncertainty in the EU remains a significant barrier, creating difficulties in market access and product approval.

📢 Better public communication – Providing transparent, fact-based, easy to understand, information will help consumers distinguish more precisely NGTs from older genetic modification techniques.

🛒 Affordable & accessible products – Studies, including GeneBEcon's own consumer survey, show that price incentives can encourage consumers to choose NGT-derived foods.

🔬 Building trust in oversight – Strengthening regulatory transparency will help NGT-product users make informed choices.

For NGTs to succeed, farmers, policymakers, industry, and consumer groups must collaborate. Clear communication, strong governance, and public engagement are essential for a healthier, more sustainable, and resilient food system— the goal of this NGT Transition Action Plan.

# Benefits of NGT-plants and products

New Genomic Techniques (NGTs), such as plant gene editing, offer major opportunities for agri-food systems and the bioeconomy.

The GeneBEcon project has demonstrated their potential with two key examples: virus-resistant potato with an optimized tuber starch quality and microalgae producing healthy carotenoids.

**Healthier, More Sustainable Potato Production** 🥔

NGT potatoes can help reduce pesticide use and increase crop resilience. For example, by introducing resistance to the potyvirus PVY, gene-edited potatoes limit disease spread by aphids, cutting pesticide use across 1.7 million hectares (equivalent to Switzerland area) of European potato production by approximately 850,000 kg of active ingredients. This not only protects the environment but also secures the livelihoods of 1.5 million potato farmers.

Beyond pest resistance, NGTs can improve the starch quality of potato tubers, eliminating the need for chemical modifications during processing. This innovation could save up to 75,000 tonnes of chemicals and 7.5GWh energy annually, lowering production costs and reducing environmental impact.

**Gene-Edited Microalgae: A Sustainable Bioeconomy Booster** 🌿

NGTs can also enhance microalgae's ability to produce high-value compounds, such as:
✅ Omega-3 fatty acids for food and nutrition.
✅ Antioxidant pigments, such as carotenoid lutein, for cosmetics and pharmaceuticals.

Microalgae also act as natural $CO_2$ absorbers, turning atmospheric $CO_2$ into valuable organic compounds. This makes them a climate-friendly production system, reducing greenhouse gas emissions while promoting sustainable innovation.

**A Circular Approach: Zero Waste, More Value** ♻️
NGT microalgae can maximize resource use by repurposing residual biomass as a high-quality poultry feed. This provides a sustainable alternative to legume-based feed ingredients, reducing reliance on traditional crops while enhancing animal nutrition and health. Increased microalgae production could generate economic gains of €11.2 million across Europe.

**Conclusion**
These examples from GeneBEcon show how NGTs can improve food and industrial production by enhancing crop resilience, reducing environmental impact, and supporting a circular bioeconomy. By integrating NGT innovations, Europe can achieve sustainable, resource-efficient agriculture while fostering economic growth. To realise these benefits though, it is necessary to either develop new enabling legislation or to modify the implementation of existing legislation. Under the current circumstances, NGT-derived potato and microalgae have an extremely low chance of getting commercialized in the EU.

# Relevance to European Policies

NGTs offer a significant opportunity to enhance **food security, sustainability, and consumer benefits** in Europe. These advanced breeding methods improve **crop resilience**, reduce the need for **chemical inputs**, and support **environmentally friendly food production**. For consumers, this means access to healthier, more sustainable, and potentially more affordable food products.

NGT products can support the newly defined **Vision for Agriculture and Food** for a competitive, resilient, future-oriented, and fair EU food production system contributing to EU's food security. NGTs also align with key EU policies, including the **European Green Deal** and the **Farm to Fork Strategy**, by ensuring that food systems are resilient, resource-efficient, and capable of mitigating climate change.

NGTs support the EU's target of halving pesticide use by 2030 by reducing dependency on chemical pesticides and fertilisers. Enhancing plant resilience through NGTs also lowers agricultural emissions, mitigates climate change impacts, and strengthens food security. However, consumer desirability and acceptance remain critical for market integration, requiring clear communication about the benefits and safety of NGT-derived products.

NGTs promote resource efficiency and waste reduction, aligning with the **EU Circular Economy Action Plan**. Enhanced plant traits can extend shelf life, improve durability and optimise the use of agricultural by-products, supporting circularity across food and industrial value chains. However, farmer and public awareness campaigns are necessary to inform about these environmental and economic benefits of NGT-derived products.

NGTs contribute further, to the **EU Zero Pollution Action Plan**, by minimising pollution from agriculture and industry. NGT-bred crops may require fewer synthetic inputs, reducing soil, water, and air contamination. As with other policies, gaining consumer confidence is crucial.

NGTs can drive progress in the **EU Bioeconomy Strategy**, facilitating the development of bio-based materials, sustainable biofuels, and innovative bioproducts. By improving microbial strains and plant-based resources, NGTs boost resource efficiency, reduce fossil fuel dependency, and contribute to a more sustainable bioeconomy. Ensuring market acceptance of bio-based innovations through regulatory clarity is essential for the European bioeconomy.

NGTs can also provide solutions in the context of the EU biotechnology and biomanufacturing initiative. Innovation in biotechnology can be an important building block in the efforts to reduce the overall environmental footprint of agri-food production systems making them more resilient and supportive to reach the EU's climate neutrality goal and to provide more sustainable and some healthier foodstuffs[2].

Overall, NGTs align with EU sustainability goals by fostering innovation, reducing environmental footprints, and supporting resilient and resource-efficient systems across agriculture, industry, and the bioeconomy. To unlock their full potential, transparent communication, trust, and regulatory clarity will be essential for their successful integration into the European agricultural, industrial and bioeconomy strategies.

2 Nature-based solutions - European Commission (europa.eu) COM(2024) 137 Building the future with nature: Boosting Biotechnology and Biomanufacturing in the EU

# About GeneBEcon

**GeneBEcon: Advancing Sustainable Agriculture & Bioeconomy with NGTs**

The **GeneBEcon project** (2023-2025), funded by the Horizon Europe Research & Innovation Programme under the Clean Environment Zero Pollution Initiative, focuses on **sustainable, bio-based solutions** for agriculture and industry. The GeneBEcon consortium is multidisciplinary bringing together experts from agricultural research, biotechnology, economy, food law, policy, social sciences and representatives of the whole agro-food value chain.

**The Challenge and Solutions:**
NGTs have great innovation potential, but their success depends on balanced regulations, economic support, and public trust. GeneBEcon tackled this by:

- ✅ **Developing virus-resistant potatoes** to improve starch quality and reduce chemical processing.
- ✅ **Enhancing microalgae-based production** of valuable compounds while repurposing biomass as animal feed.
- ✅ **Using precise gene-editing techniques** to create targeted modifications with minimal unintended effects.
- ✅ **Advancing molecular analytical tools** to support risk assessment and regulation.
- ✅ **Collaborating with businesses** to bridge research and real-world implementation, promoting **low-input, energy-efficient agriculture** and streamlined industrial processing.

**Evaluating Regulatory & Economic Impact:**
GeneBEcon **evaluated different regulatory options** to assess their impact on European agriculture, the economy, and biosafety. The project demonstrated how s**cientific knowledge can inform better policies** by comparing NGT plants with conventional varieties in terms of biosafety requirements.
To understand the **economic and social impact of NGTs**, the project:

- 📊 **Used an investment evaluation method** to assess the economic impact of regulating NGTs on the investment decisions of plant breeders in the EU.
- 📊 **Applied a socio-economic model** to calculate the global cost of delaying the adoption of NGTs.
- 🛒 **Surveyed 5,000 consumers**, finding that once people understood the benefits of NGTs, they were more willing to purchase NGT-based products.

An indirect but significant impact of the GeneBEcon project lies in its potential to enhance consumer trust. When consumers are presented with NGT products that demonstrably offer improvements over conventional alternatives, their willingness to consider and adopt such products is likely to increase.

**Responsible Research & Public Engagement**
GeneBEcon applied **Responsible Research and Innovation (RRI)** by prioritising **ethics, inclusivity, and transparency**. Through six stakeholder workshops, the project:

- 🤝 Fostered open discussions and **built trust** in science and innovation.
- 📢 Gave a voice to **underrepresented stakeholders** in research and policy debates.
- 🔍 Ensured that research remains **socially relevant, sustainable, and aligned with public values.**

With its pioneering work in potatoes and microalgae, GeneBEcon has demonstrated how **precision breeding can drive sustainable agriculture and bio-based industries**, shaping a resilient and forward-thinking European bioeconomy.

# Why do we need a TAP in EU?

The introduction and acceptance of New Genomic Techniques (NGTs) in the European Union requires a comprehensive and coordinated **Transition Action Plan (TAP)** to guide and align the diverse range of stakeholders, including consumers, farmers, breeders, the food industry, NGOs, and policymakers. Such a plan is essential to bridge the gap between scientific advancements and societal expectations, ensuring that innovation supports the EU's sustainability goals while maintaining public trust and regulatory coherence. TAP goals are:

**Consumer Guidance and Trust Building**
Public acceptance is pivotal for the success of NGTs. Many consumers do not have a clear attitude to biotechnology due to concerns around safety, ethics, and potential environmental impacts. A Transition Action Plan would facilitate transparent communication and provide science-based information. Educational campaigns and dialogue with citizens are crucial to building trust and demonstrating how NGTs align with health, sustainability, and climate resilience goals.

**Farmer and Breeder Support**
Farmers and breeders need clear frameworks for NGTs to enhance productivity, reduce input costs, and support climate adaptation. The Transition Action Plan can offer access to tailored training, financial incentives, and knowledge-sharing platforms to ensure that these stakeholders will have the necessary tools and confidence to adopt NGTs responsibly and effectively.

**Engaging the Agri-Food Value Chain**
The agri-food industry plays a key role in the NGT transition by incorporating NGT-derived ingredients and products into the supply chain. The Transition Action Plan would outline strategies to foster cooperation between producers and retailers, ensuring that NGT products meet quality, safety, and sustainability standards, while addressing evolving consumer preferences and ethical concerns.

**Addressing NGO Concerns**
Environmental and consumer protection NGOs often express caution or opposition towards NGTs. A structured Transition Action Plan would promote ongoing dialogue, transparency in risk assessment, and independent scientific evaluations to address concerns related to biodiversity, ecosystem health, and corporate control over genetic resources.

**Policy Coordination, Regulatory Clarity and Legal Certainty**
Policymakers need a coherent framework and legal certainty to align NGT adoption with EU agri-food strategies. A Transition Action Plan would streamline regulatory processes, ensure alignment with sustainability targets, and foster harmonized policies across Member States, balancing innovation with precautionary principles.

In sum, a well-structured Transition Action Plan is key to create a shared vision for NGT acceptance across all sectors, ensuring that innovation serves public good, environmental sustainability, and economic resilience while fostering trust and transparency in the EU's food and agricultural systems.

# Methodology for developing the NGTs Transition Action Plans

Every innovation to succeed requires an effective change management approach and a clear transition plan to address stakeholder's values and interests. As part of of Responsible Research and Innovation (RRI), the GeneBEcon project developed the NGTs Transition Action Plan (TAP), enabling agri-food and feed stakeholders to navigate the changes brought by NGTs. This structured, participatory approach was led by XPRO Consulting Limited, applying its proprietary RRI Roadmap©™ methodology.

**Developing the NGTs Transition Action Plans: A Phase-Oriented, Inclusive Approach**

The GeneBEcon project followed a structured, multi-stakeholder approach to develop actionable NGTs Transition Action Plans, ensuring broad engagement across policymakers, industry, food and feed producers/traders, and consumer groups. This process unfolded in four key phases, each refining strategies for responsible NGT adoption.

**Phase 1 and 2: Understanding the NGT Landscape – 1st RRI Workshop (Nov 2023)**

After an internal workshop, the first stakeholder workshop mapped the state of NGTs in Europe and examined key challenges and opportunities in the agri-food sector. Stakeholders conducted a SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) to assess regulatory, technological, and societal factors impacting NGT adoption.

Key Outcomes:

✅ Identified six key stakeholder groups: 1) policymakers, 2) consumer associations, 3) the food industry, 4) breeder associations, 5) farmer associations, and 6) NGOs, along with their specific needs and concerns.

✅ Recognized misinformation and regulatory uncertainty as two major barriers to public acceptance.

✅ Brainstormed potential transition pathways, laying the foundation for the next phase.

# Methodology for developing the NGTs Transition Action Plans

**Phase 3: Co-Developing SMART Actions – 2nd RRI Workshop (Mar 2024)**
Building on insights from the first workshop, this session took a solution-oriented approach, using the I-SMART framework (Impactful, Specific, Measurable, Attainable, Realistic, Time-bound) to design targeted actions addressing barriers to NGT adoption.
Key Outcomes:
✅ Defined stakeholder-specific transition pathways tailored to policymakers, industry, farmers, breeders, NGOs and consumers.
✅ Prioritized empowerment actions, such as targeted awareness campaigns, regulatory alignment strategies, and investment in detection technologies.
✅ Established an initial Stakeholder NGT Transition Action Plan, outlining concrete actions for transitioning towards responsible NGT adoption.

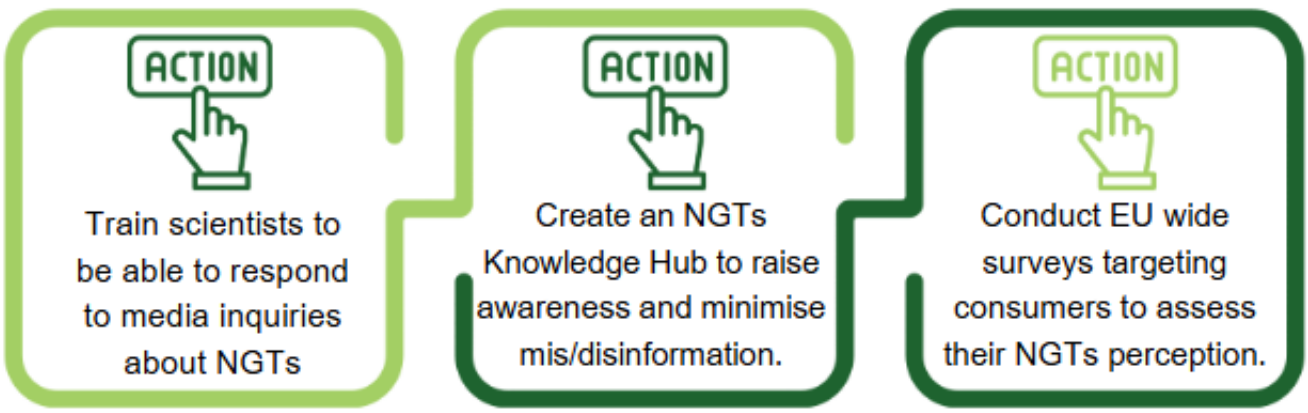
**Phase 4: Finalising the Transition Action Plans – 3rd RRI Workshop (Oct 2024) until May 2025**
The third workshop validated and refined the proposed Transition Action Plans, ensuring their feasibility, alignment with EU policy goals, and concrete implementation steps. A major focus was on building trust and multi-stakeholder collaboration. To strengthen the credibility and applicability of the plans, they were reviewed by external stakeholder groups, including regulatory bodies, industry representatives and consumer organizations.

Key Outcomes:
✅ Finalized six distinct Transition Action Plans, one for each stakeholder group, with I-SMART actions to address regulatory, social, and economic challenges.
✅ Developed strategies for dissemination and policy integration, ensuring that the results contribute to shaping future EU regulatory frameworks on NGTs.

**Conclusion: A Responsible and Inclusive Transition**
By applying a phase-oriented, co-creative approach, the GeneBEcon project ensured that the NGTs Transition Action Plans were stakeholder-driven, scientifically grounded, and policy-relevant. The iterative engagement process across the three RRI workshops allowed for the progressive refinement of strategies, resulting to a set of actionable and widely supported pathways for the responsible adoption of NGTs in the European agri-food sector.

# Core Actions

**The core actions serve as the foundation of the NGT Transition Action Plan, outlining initiatives to be carried out by NGT specialists that are relevant across all NGTs Transition Action Plans. These actions provide the essential foundation for the commencement and execution of the six NGTs Transition Action Plans.**




**The three actions shall be implemented in parallel!**

## Train scientists to be able to respond to media inquiries about NGTs

**S**

**Step: Develop and deliver a tailored training program** for scientists, focusing on science communication, handling media interviews, and crafting clear, non-technical messages about NGTs.
**Objective:** Equip scientists with the skills and confidence to effectively engage with journalists and the public.

**M**

**Step: Conduct four training workshops** for 30 scientists within six months, with at least 10 participants per session.
**Objective:** Achieve an 85% satisfaction rate based on post-training feedback and ensure 75% of participants demonstrate improved media communication skills in a simulated interview assessment.

**A**

**Step: Partner with experienced media trainers and science communicators** to deliver the training sessions.
**Objective:** Certify at least 30 scientists as "Media-Ready Experts on NGTs" by the end of the training program.

**R**

**Step:** Focus the training on **addressing common public misconceptions, emphasizing the societal benefits of NGTs** (e.g., sustainable agriculture, food security, climate resilience).
**Objective:** Ensure that 50% of trained scientists participate in media interviews, public forums, or outreach events within six months of completing the program.

**T**

**Step: Launch the training program within two months** and complete all workshops within six months.
**Objective:** Publish a directory of "Media-Ready Scientists" by the end of Q4 to facilitate media engagement and promote public understanding of NGTs.

SMART (Specific, Measurable, Achievable, Relevant, Time-Bound) is defined and explained in the next section under the paragraph “How to use the Pathway”.

## Create an NGTs Knowledge Hub to raise awareness and minimise misinformation/disinformation.

**S**

**Step: Develop an online NGTs Knowledge Hub** that serves as a centralized platform offering accurate, up-to-date information on NGTs, including scientific studies, international and EU policy briefs, EU-funded projects, FAQs, videos, and infographics.
**Objective:** Provide a reliable resource for policymakers, farmer, breeder and consumer associations, NGOs and the food industry to access verified information and counter misinformation about NGTs.

**M**

**Step: Populate the hub** with at least 50 high-quality content pieces (e.g., scientific studies, international and EU policy briefs, EU-funded projects, FAQs, videos, and infographics) within six months of launch.
**Objective:** Achieve 10,000 unique visitors and a 20% increase in time spent on the site within six months, with 80% of users reporting the content as "helpful" or "very helpful" in post-visit surveys.

**A**

**Step: Collaborate with experts, research institutions, and communication professionals** to curate and create content.
**Objective:** Ensure that 90% of the hub's content is peer-reviewed or verified by subject-matter experts before publication.

**R**

**Step: Align the hub's content with current debates, societal concerns, and EU priorities** such as food security, climate change, bio-economy strategy paper and sustainability.
**Objective:** Ensure the Knowledge Hub is cited in at least five key policy discussions, media articles, or scientific forums within six months of launch.

**T**

**Step: Launch the NGTs Knowledge Hub within four months**, with ongoing updates and content additions every two weeks.
**Objective:** Evaluate the hub's impact through analytics and user feedback, producing a report on its effectiveness in countering misinformation by the end of the first year.

## Conduct EU-wide surveys targeting the public to assess their NGTs' perception.

**S**

**Step: Design and execute a survey that targets the public** across all 27 EU member states to evaluate their awareness, understanding, and opinions about NGTs.
**Objective:** Collect data on the public's knowledge, perceived benefits, concerns, and trust in NGT-related applications.

**M**

**Step: Gather responses from at least 10,000 people across the EU**, ensuring a representative sample by including a diverse range of demographics such as age, gender, education, and geographic location.
**Objective:** Achieve a minimum 80% completion rate for the survey and analyze data by the end of the campaign.

**A**

**Step: Collaborate with professional survey organizations and local partners** to translate and distribute the survey in all official EU languages.
**Objective:** Launch the survey within two months and ensure at least 90% of EU member states meet their target response quota within four months.

**R**

**Step: Include questions that align with the EU's current debates on NGTs**, such as sustainability, food safety, and ethical concerns, to gather insights that can inform policy and communication strategies.
**Objective:** Use survey results to create a report with actionable insights to be presented to stakeholders (e.g., policymakers, industry leaders) within two months of survey completion.

**T**

**Step: Roll out the survey within three months** and collect all responses within six months.
**Objective:** Deliver a comprehensive analysis and publish findings by the end of Q3, ensuring the data is timely for ongoing legislative discussions on NGTs.

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# Section II: Specific Action Pathways for Breeders' Associations

# Transitioning Breeders towards NGTs

Breeders play a vital role in shaping public perception and ensuring accurate, accessible information on New Genomic Techniques (NGTs). Breeders' Associations have an ethical responsibility to avoid spreading misinformation or disinformation towards all stakeholders.

Humans have been selecting genetic traits for millennia by breeding plants, with the aim to either enhance crop yields or improve food quality. The findings made in modern biology have allowed to refine this process by using New Genomic Techniques (NGTs). NGTs is part of the bioeconomy, which aims to enable Europe to achieve food and nutrition security, natural resources sustainability, mitigate and adapt to climate change, achieve circularity, and strengthen economy and social fairness. To achieve these strategic goals, all Europeans must be involved to transition towards these innovations. In this respect, breeders play a crucial role for informing and guiding consumers to make informed decisions and choices.

The GeneBEcon project has worked throughout its duration with consumer associations and studied consumer trends. During this work, the project has identified two major issues that impair transitioning due to lack of information and understanding and due to non-factual or erroneous information. The goal of this document is to facilitate the work Breeders' Associations to inform diverse stakeholders about NGTs benefits and challenges.

Finally, this NGTs Transition Pathway has been developed through active stakeholder engagement, including input from Breeders' Associations, as part of GeneBEcon's Responsible Research and Innovation activities.

# How to use the Pathway

## Who implements the Pathway? Breeders' Associations

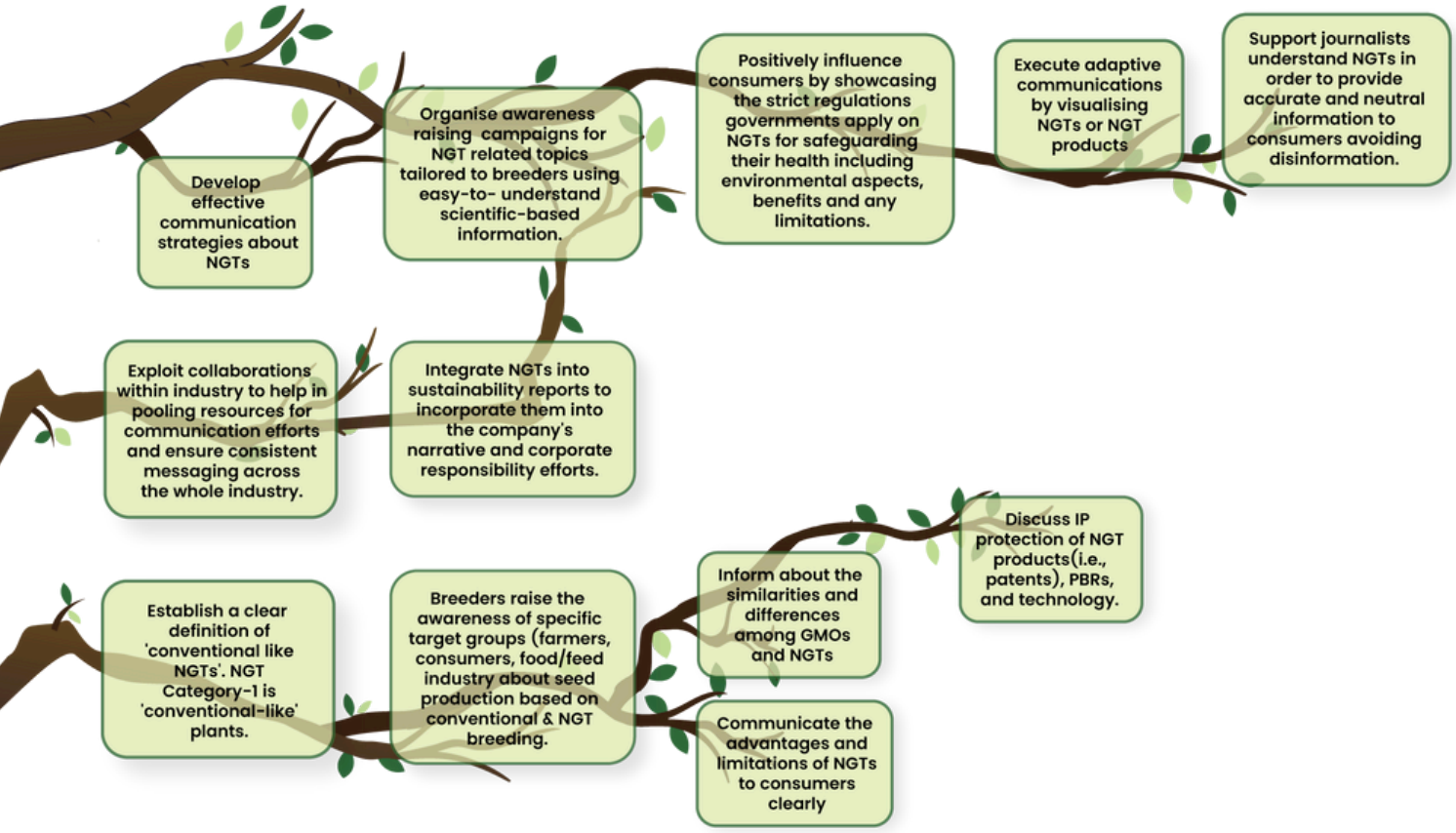
This pathway is organised into two linked phases, Phase 1 and Phase 2. Each phase consists of a series of interlinked actions. The pathway shows the logical sequence that these actions should be implemented. Actions that are illustrated in the same vertical line (top of each other) show that they are equally interdependent to each other and that they can be executed in parallel. The interdependence of the actions has been specified through a specialised algorithm and checked by stakeholders and Breeders' Associations.

Each action is defined based on the SMART principle with steps:

| | |
|---|---|
| **S pecific:** | Clearly outlines what is to be achieved, who is involved, and why it is important. |
| **M easurable:** | Includes criteria to track progress and determine success. |
| **A chievable:** | Realistic and feasible given the resources, constraints, and context. |
| **R elevant**: | Aligned with broader goals or priorities, ensuring it contributes meaningfully to the overarching objective of a consumer association. |
| **T ime-bound:** | Includes a deadline or timeline to create urgency and accountability. |

The pathway is ready for implementation, and it is up to the Breeders' Association, executing it, to adjust the objectives of each step to better fit their goals, for example the metrics and time frames mentioned in the step by step explanations. The pathway is a guidance document, and the implementation and subsequent results are the sole responsibility of the Breeders' Association and its actors.

# Phase 1



## Develop effective communication strategies about NGTs

**S**

**Step: Create a communication task force within breeder associations** to craft clear and accurate messages about NGTs tailored to different audiences (farmers, policymakers, consumers).
**Objective:** Ensure that the benefits, safety, and sustainability of NGTs are communicated effectively, avoiding misinformation.

**M**

**Step: Develop and disseminate 3 communication toolkits** (e.g., brochures, videos, infographics) for key audiences within 6 months.
**Objective:** Track the impact through surveys or focus groups, aiming for at least 70% audience understanding of NGT concepts after engagement.
KPI: Train at least 100 breeders in communication skills and reach 10,000 stakeholders (farmers, consumers, policymakers) with the messaging within 12 months.

**A**

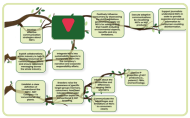
**Step: Collaborate with communication experts and scientists** to create messages that are scientifically accurate yet easy to understand. Use existing breeder networks and events to disseminate materials.
**Objective:** Allocate funding and resources for training sessions and production of materials, targeting a budget of €50,000 over the first year.

**R**

**Step: Focus on topics that align with breeder priorities**, such as increased crop yield, climate resilience, and reduced pesticide use, showcasing how NGTs address these issues.
**Objective:** Position breeders as trusted voices in the NGT debate, contributing to public and policymaker confidence in the technology.

**T**

**Step: Launch the first communication campaign within 3 months** and conduct a review of its effectiveness after 6 months.
**Objective:** Refine the strategy based on feedback and roll out a second phase within 12 months, scaling efforts to a broader audience.



## Organise awareness raising campaigns for NGT related topics tailored to breeders using easy-to- understand scientific-based information.

**S**

**Step: Implement awareness campaigns for breeders** focusing on business models and breeding programmes for NGTs crops.
**Objective:** Ensure breeders understand how NGTs align with their business strategy and practices.

**M**

**Step: Conduct 5 regional workshops for breeders within 6 months** and distribute 2,000 educational toolkits (brochures, videos, infographics).
**Objective:** Measure success through pre- and post-workshop surveys, aiming for 80% of participants to report increased knowledge about NGTs.
**KPI:** Achieve a maximum possible reach of breeders across EU member states by the end of 12 months.

**A**

**Step: Partner with agricultural research institutions, breeder associations, and communication experts** to develop and deliver scientifically accurate and engaging materials.
**Objective:** Leverage breeder networks and existing events (e.g., trade shows, conferences) to maximize campaign impact without requiring significant additional resources.

**R**

**Step: Tailor messaging to breeders' needs**, focusing on how NGTs can improve yield, reduce costs, and support sustainable farming practices. **Address common misconceptions and regulatory concerns.**
**Objective:** Position NGTs as a practical and innovative tool for modern breeding practices, aligning with breeders' goals and priorities.

**T**

**Step: Launch the campaign within 3 months, with all workshops and materials distributed by 12 months.** Conduct follow-up surveys within 3 months post-campaign to assess knowledge retention and behavior change.
**Objective:** Use feedback to improve future campaigns and update materials as needed within 18 months.

## Positively influence consumers by showcasing the strict regulations governments apply on NGTs for safeguarding their health including environmental aspects, benefits and any limitations.

**S**

**Step: Develop and implement a consumer-focused communication campaign** that highlights the strict regulatory framework for NGTs, emphasizing health safeguards, environmental benefits, and transparency regarding limitations.
**Objective:** Build consumer trust in NGTs by explaining how government regulations ensure safety and sustainability.

**M**

**Step: Create and distribute 5 key educational materials** (e.g., videos, infographics, brochures) and reach 1 million consumers across the EU through online platforms, social media, and events within 12 months.
**Objective:** Measure effectiveness through surveys, aiming for 70% of surveyed consumers to acknowledge government safeguards as an assurance of safety.
**KPI:** Track engagement metrics, such as 50,000 video views and 20,000 brochure downloads.

**A**

**Step: Collaborate with regulators, consumer associations, and scientists** to create credible, easy-to-understand content that explains how regulations protect health and the environment.
**Objective:** Utilize government resources and existing partnerships with stakeholders to amplify the campaign's reach without requiring excessive funding.

**R**

**Step: Address consumer concerns directly**, such as food safety, environmental impact, and transparency, by showcasing case studies and examples of how NGTs are regulated and monitored.
**Objective:** Position NGTs as a responsible and regulated innovation, aligning with consumer priorities like safety and sustainability.

**T**

**Step: Launch the campaign within 3 months, with periodic updates every 3 months** to address emerging topics or feedback. Conduct a final assessment of the campaign's impact within 12 months.
**Objective:** Use results to refine and sustain ongoing efforts in building consumer trust in NGTs.

## Execute adaptive communications by visualising NGTs or NGT products

**S**

**Step: Create and implement visual communication materials**, such as infographics, animations, and interactive tools, to showcase how NGTs and NGT products are developed, their benefits, and their impact on health, agriculture, and sustainability.
**Objective:** Educate breeders about NGTs in a clear, engaging, and accessible way.

**M**

**Step: Develop 5 types of visual tools** (e.g., explainer videos, 3D models, interactive web pages). **Disseminate materials across 10 platforms** (social media, websites, events) and reach at least 500,000 people within 12 months.
**Objective:** Collect user feedback and engagement metrics (e.g., 10,000 likes/shares, 50,000 video views, 1,000 survey responses) to measure success.

**A**

**Step: Partner with communication experts, designers, and scientists** to produce high-quality visual content. Use cost-effective tools and platforms (e.g., Canva, Adobe, or AI tools) for content creation.
**Objective:** Leverage existing networks and resources within the industry, academic institutions, and government agencies to amplify outreach without overextending budgets.

**R**

**Step: Address the lack of understanding of NGTs** by presenting complex scientific processes in simple, visual formats. Tailor messaging to breeders' needs, such as showing sustainability benefits or yield improvements.
**Objective:** Build trust and support for NGTs by making information accessible and visually compelling.

**T**

**Step: Complete the production of initial visual materials within 3 months**. Begin distribution in month 4, ensuring regular updates every 3 months to adapt content based on audience feedback and evolving developments in the NGT space.
**Objective:** Evaluate the effectiveness of communication efforts within 12 months, and adjust strategies accordingly.

## Support journalists understand NGTs in order to provide accurate and neutral information to consumers avoiding disinformation.

**S**

**Step: Organize training workshops, webinars, and informational sessions for journalists**, focusing on the science, applications, benefits, and limitations of NGTs. Provide journalists with access to breeder associations' experts, fact sheets, and resources for accurate reporting.
**Objective:** Equip journalists with the knowledge and tools needed to report accurately on NGTs while countering disinformation.

**M**

**Step: Conduct 5 workshops or webinars annually**, each targeting 30 journalists from diverse media outlets. **Develop and distribute 3 media toolkits** containing FAQs, case studies, and visuals on NGTs, aiming for a download rate of 50 toolkits within 12 months.
**Objective:** Measure engagement by achieving 75% attendance at training sessions and securing 20 accurate articles about NGTs published within the first year.

**A**

**Step: Collaborate with agricultural experts, scientists, and communication professionals** to create content and deliver training.
**Objective:** Use existing resources and partnerships to ensure the delivery of high-quality, accessible, and impactful training.

**R**

**Step: Address the growing demand for accurate and neutral NGT information among the public** by enabling journalists to better understand and communicate this topic.
**Objective:** Strengthen the public perception of NGTs through well-informed, balanced reporting.

**T**

**Step: Launch the first journalist workshop within 3 months**. Publish the first media toolkit and distribute it to journalists within 6 months. Track and evaluate the impact of these efforts (e.g., articles published, social media reach) within 12 months.
**Objective:** Establish an ongoing program with updated training sessions and resources every 6 months.

## Exploit collaborations within agri-food industry to help in pooling resources for communication efforts and ensure consistent messaging across the whole industry.

**S**

**Step: Establish a multi-stakeholder working group within the agri-food industry**, including breeders, food producers, retailers, and trade associations, to collaboratively develop and fund unified communication campaigns about NGTs.
**Objective:** Create consistent and science-based messaging across the industry to address consumer concerns, highlight benefits, and build trust in NGTs.

**M**

**Step: Form the working group within 3 months**, ensuring participation from at least 10 key industry players. **Develop and execute 2 joint communication campaigns** in the first year, targeting at least 1 million consumers through social media, print, and digital platforms.
**Objective:** Track the number of industry members involved, total funding raised, and the reach and engagement of communication campaigns.

**A**

**Step: Use industry trade events, forums, and existing networks to recruit members** for the working group.
**Objective:** Build on existing relationships and resources to ensure successful collaboration without overburdening individual organizations.

**R**

**Step: Focus on addressing consumer questions, dispelling myths, and showcasing the benefits of NGTs**.
**Objective:** Align industry players around a shared goal of improving public understanding and acceptance of NGTs.

**T**

**Step: Establish the working group and its objectives within 3 months**. Launch the first joint communication campaign within 6 months of forming the group. Evaluate the impact of initial campaigns and refine strategies within 12 months.
**Objective:** Ensure continuous improvement by setting annual targets for collaboration and communication efforts.

## Integrate NGTs into sustainability reports to incorporate them into the company's corporate responsibility efforts.

**S**

**Step: Identify key sustainability goals within the company's corporate responsibility strategy** where NGTs contribute, such as reducing pesticide use, enhancing biodiversity, and improving food security. Incorporate these contributions into the annual sustainability report.
**Objective:** Ensure NGTs are clearly positioned as a solution to sustainability challenges, reinforcing their alignment with corporate values and goals.

**M**

**Step: Include 3 case studies or examples of NGT applications that align with sustainability goals** in the next sustainability report.
**Objective:** Clearly demonstrate how NGTs contribute to sustainability by showcasing specific, measurable benefits within the sustainability report and achieving stakeholder recognition of their value.

**A**

**Step: Collaborate with R&D, sustainability teams, and marketing departments** to gather accurate data on the environmental and social benefits of NGTs. Use these findings to create a compelling narrative for the report.
**Objective:** Leverage internal resources and existing data to ensure the integration process is feasible without requiring significant additional investment.

**R**

**Step: Position NGTs as a core element of the company's commitment to sustainable agriculture, climate change mitigation, and resource efficiency**. Show how NGTs contribute to global environmental goals, such as the UN Sustainable Development Goals (SDGs).
**Objective:** Ensure the inclusion of NGTs in the sustainability report aligns with both corporate values and the expectations of stakeholders such as investors, consumers, and regulatory bodies.

**T**

**Step: Begin data collection and narrative development within 3 months**. Publish the updated sustainability report incorporating NGTs within 12 months. Conduct stakeholder feedback sessions within 2 months after the report's release to refine future messaging.
**Objective:** Publish a comprehensive sustainability report that successfully integrates NGT contributions, demonstrating the company's leadership in sustainable innovation and securing recognition from stakeholders by a specified deadline.

## Establish a clear definition of 'conventional like NGTs'. NGT Category-1 is 'conventional-like' plants.

**S**

**Step: Collaborate with industry organizations, scientific experts, and policymakers to define clear criteria for "conventional-like" NGTs**, focusing on biological, genetic, and agronomic similarities to traditional breeding methods.
**Objective:** Establish a breeder-driven framework to align with regulatory and scientific standards.

**M**

**Step: Conduct three working group meetings within the first 6 months**, each with at least 15 breeders and scientific experts. Publish a draft document for feedback within 7 months and achieve 80% approval from participants in the final review.
**Objective:** Develop a scientifically validated definition of "conventional-like NGTs" with input from at least 50 breeders and 10 scientific experts within 9 months.

**A**

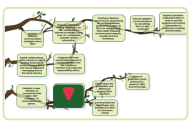
**Step: Leverage existing breeder associations and partnerships with scientific institutions** to provide the necessary expertise and resources for developing the definition.
**Objective:** Ensure the working groups have access to genetic and agronomic data supporting "conventional-like" classifications.

**R**

**Step: Align the definition with regulatory requirements for NGT Category-1** and promote it as part of ongoing legislative discussions at the EU level.
**Objective:** Position the definition as essential for simplifying compliance, ensuring market access, and gaining public trust.

**T**

**Step: Complete initial stakeholder outreach and organize the first meeting within 2 months**. Publish the final definition as an industry white paper or guideline within 12 months. Present the definition to regulatory bodies and policymakers during key conferences or events within 3 months after publication.
**Objective:** Finalize and disseminate the definition within 12 months to industry stakeholders, policymakers, and regulators.



## Breeders raise the awareness of specific target groups (farmers, consumers, food/feed industry about seed production based on conventional & NGT breeding.

**S**

**Step: Design and implement tailored awareness campaigns to educate farmers, consumers, and the food/feed industry** on the similarities, differences, and benefits of seed production through conventional and NGT breeding.
**Objective:** Help target groups make informed decisions and build trust in NGT-based seeds.

**M**

**Step: Conduct 5 workshops, 3 webinars, and distribute 10 informational materials** (flyers, videos, or fact sheets) within 12 months aiming to reach 5,000 farmers, 10,000 consumers, and 500 food/feed industry representatives with clear information about NGT and conventional breeding.
**Objective:** Track engagement through attendance numbers, website visits, and downloads of informational materials. Achieve a minimum 80% satisfaction rate in post-event surveys to measure understanding and impact.

**A**

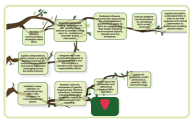
**Step: Leverage existing breeder networks, collaborations with agricultural cooperatives, and partnerships with industry stakeholders** to ensure access to the target groups.
**Objective:** Use breeder associations and events (e.g., agricultural fairs, consumer expos) to streamline resource allocation and outreach efforts.

**R**

**Step: Align campaigns with ongoing discussions about NGT legislation and consumer trust issues** to address misconceptions and highlight the sustainability and productivity benefits of NGT seeds.
**Objective:** Build credibility for breeders and enhance the acceptance of NGT seeds in agriculture and food systems.

**T**

**Step: Conduct the first workshop within 3 months** and subsequent workshops every 2 months thereafter. Publish and distribute informational materials (both online and offline) within the first 6 months. Host a final event to summarize and share results at the end of the 12-month period.
**Objective:** Complete the campaign within 12 months and publish an impact report to stakeholders (including farmers and policymakers) within 14 months.



## Communicate the advantages and limitations of NGTs to consumers clearly

**S**

**Step: Create and implement a consumer-focused communication campaign** to highlight the advantages (e.g., sustainability, food security, nutritional benefits) and limitations (e.g., challenges in detection, regulatory concerns) of NGTs in an easy-to-understand, balanced, and transparent manner.
**Objective:** Build trust and awareness among consumers by providing accurate and accessible information about NGTs.

**M**

**Step: Create and distribute educational materials** (infographics, videos, FAQs) through partnerships, host 10 community events, run digital campaigns to reach 50,000 consumers, and monitor the impact through surveys to improve consumer knowledge of NGTs.
**Objective:** Build trust and awareness among consumers by providing clear, balanced, and transparent information about the advantages and limitations of NGTs.

**A**

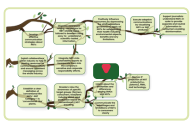
**Step: Collaborate with consumer associations, food industry organizations, and scientific institutions** to co-create materials and amplify distribution channels.
**Objective:** Use existing networks and digital tools to maximize reach and engagement cost-effectively.

**R**

**Step: Ensure the messaging aligns with consumer concerns**, such as food safety, environmental sustainability, and transparency.
**Objective:** Address consumer needs and foster trust in NGTs while remaining aligned with legislative and market trends.

**T**

**Step:** Publish the first set of materials (e.g., a video series and FAQ on NGTs) by Month 3 and host monthly events for 10 months. Conduct consumer knowledge surveys at the start, midpoint, and end of the campaign to assess progress.
**Objective:** Evaluate the campaign's success within 2 months post-completion, using surveys and engagement metrics.



## Inform about the similarities and differences among GMOs and NGTs

**S**

**Step: Develop and disseminate clear, science-based informational materials** that explain the similarities and differences between GMOs (Genetically Modified Organisms) and NGTs (New Genomic Techniques).
**Objective:** Help target groups (e.g., consumers, policymakers, farmers, food industry representatives) understand the key distinctions and overlaps, enabling informed decision-making and reducing misconceptions.

**M**

**Step: Create and distribute at least 10 easy-to-understand educational materials** (e.g., videos, infographics, brochures, and interactive web content) within 12 months.
**Objective:** Reach a minimum audience of breeders and achieve a 40% improvement in understanding, as measured by pre- and post-campaign surveys.

**A**

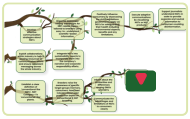
**Step: Collaborate with universities, industry associations, and agricultural cooperatives** to co-develop and validate the content. Use existing channels like social media, newsletters, and agricultural fairs to maximize outreach.
**Objective:** Ensure cost-effective and widespread distribution by leveraging partnerships and using digital platforms.

**R**

**Step: Align this initiative with the ongoing public and legislative debates on NGTs** to address the misconceptions that often group the use of modern NGTs with older transgenic GMOs.
**Objective:** Support breeders in making informed decisions and contribute to the acceptance of NGTs in breeding and food systems.

**T**

**Step: Launch the first set of educational materials within 3 months** and roll out the full campaign across digital and traditional media channels within 6 months. Evaluate the campaigns' impact and refine messaging based on feedback after 12 months.
**Objective:** Complete the full campaign within 12 months and publish a final impact report detailing reach, engagement, and changes in public understanding.



## Discuss IP protection of NGT products (i.e., patents), PBRs, and technology.

**S**

**Step: Organize stakeholder discussions and workshops involving policymakers, scientists, industry representatives, and legal experts** to address Intellectual Property (IP) concerns, including patents, Plant Breeders' Rights (PBRs), and technological advancements related to NGTs.
**Objective:** Develop a shared understanding of IP frameworks applicable to NGTs and identify gaps or challenges.

**M**

**Step: Host three multi-stakeholder workshops in key EU regions** within the next year, each with at least 30 participants from different sectors. **Produce a position paper** summarizing findings, including actionable recommendations, within 3 months after the final workshop.
**Objective:** Achieve a consensus among key stakeholders on at least two recommended actions or strategies for IP protection of NGT products within 6 months of initiating discussions.

**A**

**Step: Collaborate with existing IP experts, legal teams, and industry organizations** to provide background research and analysis on IP systems for NGTs.
**Objective:** Ensure access to the necessary expertise and data to inform discussions and develop practical solutions for IP protection.

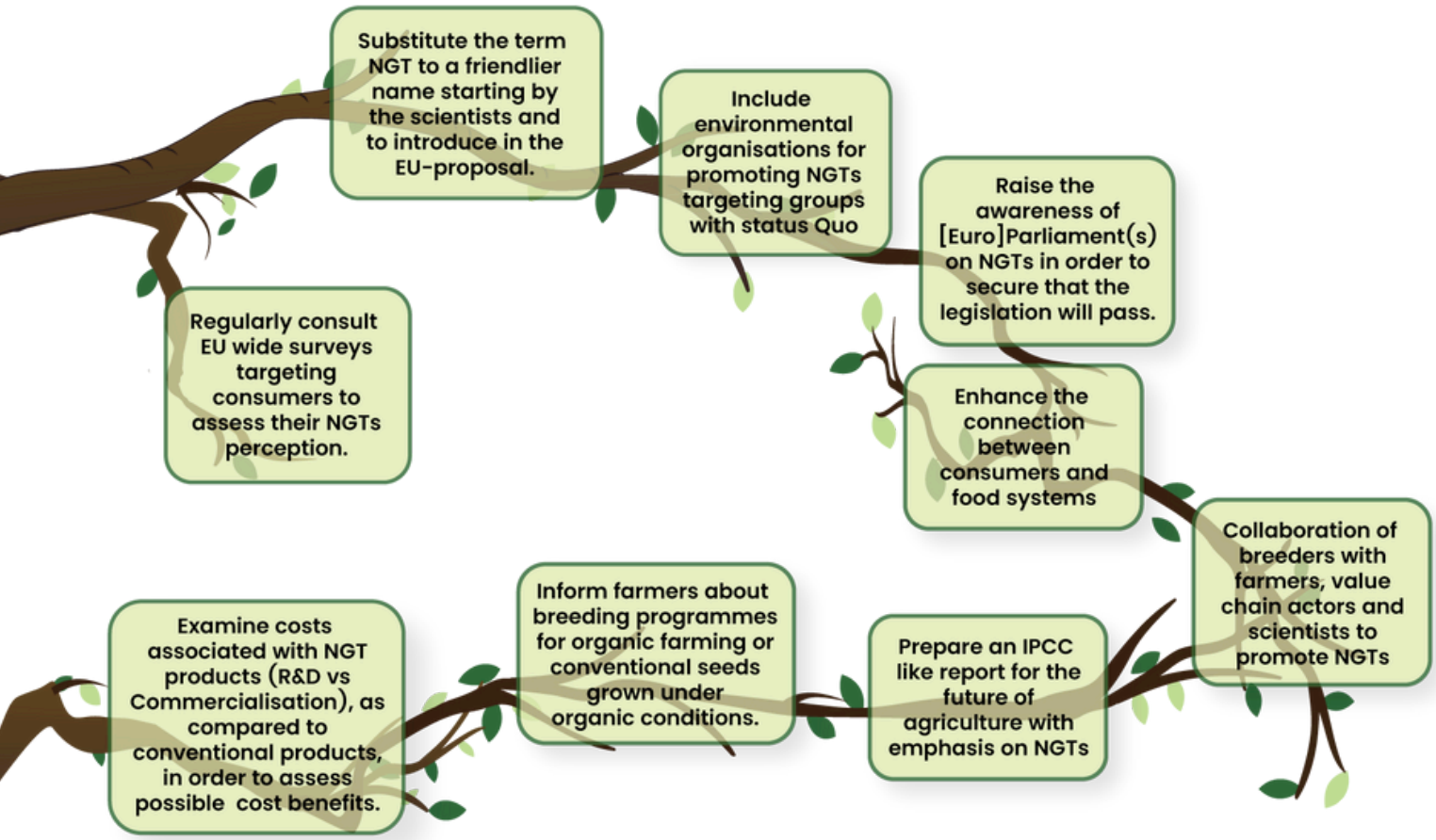
**R**

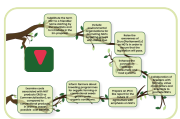
**Step: Steer the discussions parallel to ongoing legislative and regulatory developments in the EU and globally**, emphasizing how IP frameworks can drive innovation while safeguarding fair access to NGTs for breeders farmers and consumers.
**Objective:** Position strong IP protection systems as critical components of enabling sustainable adoption of NGTs in agriculture.

**T**

**Step: Launch the first workshop within 3 months**. Publish a position paper with actionable recommendations within 12 months. Plan a follow-up meeting with policymakers and industry leaders within 2 months after releasing the position paper to begin implementing recommendations.
**Objective:** Deliver actionable recommendations for IP protection of NGTs to EU policymakers and industry stakeholders within 12 months of initiating discussions.

# Phase 2



## Regularly consult EU-wide surveys targeting consumers to assess their NGTs perception.

**S**

**Step: Assign a dedicated team to review and summarize survey findings annually**, focusing on consumer concerns and preferences.
**Objective:** Consult EU-wide consumer perception surveys to identify key attitudes toward NGTs.

**M**

**Step: Track the number of surveys reviewed and document actionable insights** from each report.
**Objective:** Evaluate at least two EU-wide surveys each year to gain insights into consumer sentiment.

**A**

**Step: Create a timeline and assign tasks** for analyzing, summarizing, and presenting survey findings.
**Objective:** Ensure survey analysis is integrated into strategy reviews within two months of publication.

**R**

**Step: Adjust messaging or product development strategies annually** based on identified consumer concerns or preferences.
**Objective:** Use survey insights to align breeding and communication strategies with consumer expectations.

**T**

**Step: Set deadlines for reviewing surveys** (within two months of publication) and updating strategies accordingly.
**Objective:** Complete survey analysis and apply insights to breeding strategies by Q2 of each year.

## Substitute the term NGT to a friendlier name starting by the scientists and to introduce in the EU-proposal.

**S**

**Step: Convene a working group of scientists, communication experts, and industry stakeholders** to brainstorm and finalize the term.
**Objective:** Identify and agree on a friendlier term for NGTs.

**M**

**Step: Conduct a survey among stakeholders** to validate the proposed term within 12 months.
**Objective:** Ensure the new term is supported by at least 80% of stakeholders consulted.

**A**

**Step: Host three workshops** to ensure scientists are aligned and ready to advocate for the term in publications and policy dialogues.
**Objective:** Build consensus among scientists and introduce the term into EU discussions.

**R**

**Step: Launch an awareness campaign among scientific, industry, and policymaking communities** to promote the term.
**Objective:** Make the term widely adopted to positively influence public and regulatory perception of NGTs.

**T**

**Step: Submit a formal recommendation with supporting materials to EU policymakers within 12 months.**
**Objective:** Incorporate the new term in the EU proposal before its next revision cycle.

## Include environmental organisations for informing NGTs targeting groups with status quo

**S**

**Step: Establish partnerships with at least five influential environmental organizations** to co-develop messaging and outreach strategies.
**Objective:** Identify and involve key environmental organizations in NGT discussions.

**M**

**Step: Organize three joint workshops or campaigns with environmental organizations within 9 months**, with 80% of participants from targeted groups reporting increased awareness.
**Objective:** Achieve participation of environmental organizations in informing about NGTs to status quo groups.

**A**

**Step: Develop tailored information packets within 6 months**, addressing environmental benefits of NGTs, to facilitate informed collaboration with these organizations.
**Objective:** Build trust with environmental organizations to engage in informing about NGTs.

**R**

**Step: Co-create a communication plan** highlighting NGT contributions to sustainability, biodiversity, and climate resilience.
**Objective:** Ensure NGT messaging aligns with environmental organizations' values to reach status quo groups.

**T**

**Step: Launch a joint awareness campaign with environmental organizations** targeting status quo groups within 12 months, with measurable impact metrics collected after the completion of the campaign.
**Objective:** Establish visible collaboration with environmental organizations within one year.

## Raise the awareness of all policymakers on NGT products to secure that the legislation will be fit for purpose.

**S** **Step: Organize targeted briefing sessions with Members of the European Parliament (MEPs), Council and national policymakers** and prepare concise, science-based policy briefs on NGTs
**Objective:** Inform MEPs about the scientific, economic, and sustainability benefits of NGTs, as well as the robust regulatory frameworks ensuring safety.

**M** **Step: Conduct pre- and post-briefing surveys with participating policymakers**, targeting a 30% improvement in their awareness and positive perception of NGTs within 9 months.
**Objective:** Ensure that awareness efforts lead to an increase in understanding and support among policymakers.

**A** **Step: Collaborate with at least 3 leading scientific institutions and industry advocacy groups** to develop the briefing content and materials.
**Objective:** Leverage expertise and resources to deliver accurate and persuasive information.

**R** **Step: Integrate case studies and data** demonstrating how NGTs contribute to sustainable agriculture and food security into all briefing materials, ensuring the message resonates with current EU policy goals.
**Objective:** Align the NGT messaging with broader EU priorities such as the European Green Deal and Farm to Fork Strategy.

**T** **Step: Launch the campaign within 3 months**, complete all briefing sessions and survey assessments by within 6 months, and compile an impact report 2 months before the next major parliamentary vote on NGT legislation.
**Objective:** Complete the awareness campaign in time to influence legislative decision-making.

## Enhance the connection between consumers and food systems

**S** **Step: Create interactive campaigns** including farm tours, webinars, and digital storytelling (e.g., videos, virtual farm tours) that highlight sustainable practices and the impact of agriculture on communities.
**Objective:** Develop targeted educational initiatives that showcase the entire food production process - from cultivation to consumption.

**M** **Step: Aim to reach at least 50,000 consumers through combined digital and in-person initiatives within 12 months**, and achieve an 80% positive feedback rate (measured through surveys and social media engagement metrics).
**Objective:** Quantify consumer engagement and awareness improvements.

**A** **Step: Collaborate with local farms, agricultural cooperatives, food retailers, and consumer advocacy groups** to co-host events and distribute content, ensuring participation from at least 20 key partner organizations.
**Objective:** Leverage existing networks and partnerships to ensure feasibility.

**R** **Step: Focus messaging on the benefits of sustainable agriculture, transparency in food production, and the positive social and environmental impact of local food systems**, aligning with the EU Green Deal and other sustainability strategies.
**Objective:** Ensure the initiatives resonate with current consumer values and align with broader food system sustainability goals.

**T** **Step: Launch the initial phase of the campaign within 3 months,** run a full-scale campaign over 12 months, and complete an impact assessment (including surveys and digital analytics) within 2 months after the campaign concludes.
**Objective:** Implement and evaluate the campaign within a defined timeframe.

## Collaboration of breeders with farmers, value chain actors and scientists to inform about NGTs

**S**

**Step: Form a multi-stakeholder working group by inviting representatives from each sector**, and schedule an initial kickoff meeting within 3 months to define common goals and collaboration guidelines.
**Objective:** Establish a collaborative network that brings together breeders, farmers, value chain actors, and scientists to share knowledge and develop joint information sharing strategies for NGTs.

**M**

**Step: Organize at least 6 collaborative workshops or webinars over the next 12 months**, ensuring participation from a minimum of 50 stakeholders, and track engagement via attendance, feedback surveys, and follow-up actions (e.g., joint initiatives, publications).
**Objective:** Quantify collaboration and impact by setting targets for participation and outreach.

**A**

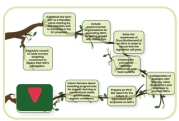
**Step: Utilize current breeder associations, agricultural cooperatives, industry trade groups, and scientific institutions** to recruit participants and co-fund events, aiming to secure partnerships with at least 5 established organizations within the first 6 months.
**Objective:** Leverage existing networks and resources to ensure effective collaboration without incurring excessive costs.

**R**

**Step: Focus workshop topics on practical applications of NGTs, regulatory compliance, sustainability benefits, and economic impacts**, with at least 80% of the session content directly addressing stakeholders' current challenges and opportunities related to NGT adoption.
**Objective:** Ensure the collaboration addresses key industry challenges and aligns with the strategic goals of all stakeholders involved.

**T**

**Step: Launch the collaborative network within 3 months**, conduct all planned workshops and webinars within 12 months, and produce a final joint action plan or white paper summarizing the agreed information sharing strategies by the end of the 12-month period.
**Objective:** Achieve tangible collaborative outputs within a defined timeframe to drive timely information on NGTs.



## Examine costs associated with NGT products (R&D vs Commercialisation), as compared to conventional products, in order to assess possible cost benefits

**S**

**Step: Develop a detailed cost analysis framework** that outlines categories such as R&D investment, regulatory compliance, production, and market launch costs for both product types.
**Objective:** Identify and define key cost components for both NGT and conventional products.

**M**

**Step: Collect and analyze data from at least 20 case studies by month 6**, producing a comparative report that includes metrics such as percentage cost savings, yield improvements, and return on investment for NGT products.
**Objective:** Quantify the cost differences between NGT and conventional products using concrete data.

**A**

**Step: Partner with at least 3 industry research institutions or financial experts** within the first 3 months to obtain accurate cost data and analytical support.
**Objective:** Secure access to reliable data and expertise to ensure a robust analysis.

**R**

**Step: Focus on cost factors that directly affect product pricing, regulatory compliance, and profitability**, and ensure that the findings are integrated into strategic planning and investment decisions.
**Objective:** Ensure the cost analysis aligns with industry priorities such as innovation, sustainability, and market competitiveness.

**T**

**Step: Finalize the cost framework by month 2,** complete data collection and analysis by month 6, and publish the comprehensive comparative report by month 9.
**Objective:** Complete the entire study and deliver actionable insights within a set timeframe.

## Inform farmers about breeding programmes for organic farming or conventional seeds grown under organic conditions.

**S**

**Step: Create a series of brochures, infographics, and videos tailored to farmers** that detail these programmes, including success stories and practical guidelines.
**Objective:** Develop educational materials that explain the benefits, methodologies, and outcomes of breeding programmes for organic farming and conventional seeds grown under organic conditions.

**M**

**Step: Distribute materials through at least 10 workshops and 5 online webinars**, aiming to reach at least 1,000 farmers and obtain a minimum 70% positive feedback rate on post-event surveys.
**Objective:** Reach and engage a target number of farmers with the new information.

**A**

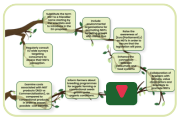
**Step: Collaborate with agricultural extension services, organic farming associations, and local cooperative groups** to disseminate the information, securing at least 3 partnership agreements within the first 3 months.
**Objective:** Leverage existing networks and partnerships to ensure the content is accessible and trustworthy.

**R**

**Step: Focus the content on the cost benefits, yield improvements, and sustainability aspects** of these breeding programmes, making sure the message supports both environmental goals and farmers' economic interests.
**Objective:** Ensure that the information addresses farmers' practical concerns and aligns with sustainable agriculture and market demand for organic products.

**T**

**Step: Develop and finalize educational materials within 3 months**. Launch the first workshop/webinar by month 4 and continue the programme through month 12. Conduct a final evaluation and publish a summary report of impact and farmer feedback by month 13.
**Objective:** Implement the entire initiative within a 12-month timeframe to quickly inform farmers and encourage adoption of these programmes.



## Prepare an IPCC like report for the future of agriculture with emphasis on NGTs

**S**

**Step: Form a multidisciplinary panel of at least 30 experts** (agricultural scientists, climate specialists, economists, and policy analysts) to outline key themes and establish the report framework.
**Objective:** Define the report's scope, topics, and structure to cover scientific, economic, and regulatory aspects of NGTs in agriculture.

**M**

**Step: Ensure the report includes at least 200 peer-reviewed references, 5 detailed case studies, and 10 actionable recommendations**, and secure endorsements from a minimum of 5 major international organizations by the final publication.
**Objective:** Quantify the report's depth and reach by incorporating comprehensive data and achieving industry recognition.

**A**

**Step: Partner with at least 10 leading research institutions and industry organizations**, and secure a funding target of €5 million within the first 6 months to support data collection, analysis, and publication efforts.
**Objective:** Leverage existing expertise and secure funding to produce a high-quality, authoritative report.

**R**

**Step: Integrate analysis on how NGTs contribute to sustainable agriculture and food security**, ensuring that at least 80% of the report's recommendations directly support existing international and regional policy frameworks.
**Objective:** Align the report's content with current global challenges and policy priorities such as the UN SDGs, the Paris Agreement, and the EU Green Deal.

**T**

**Step: Months 1–3: Form the expert panel and define the report framework by month 3.** Collect data, conduct analyses, and draft report sections by month 12. Conduct stakeholder reviews and integrate feedback by month 15 and publish the final report and launch it at a major global policy summit (e.g., COP conference) by month 18.
**Objective:** Complete and publish the report within a set timeframe to influence upcoming policy discussions.

# MY NOTES

To access all Transition Action Plans,
please visit the link or scan the QR code

- **Consumer Associations**
- **Breeder Associations**
- **National Policymakers**
- **The Food Industry**
- **Farmer Associations**
- **NGO Associations**

https://genebecon.eu/transition-action-plans-taps/

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