Expert Validation of the Intrinsic Productivity Growth Rates for Yams in West Africa

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1 Introduction

This expert validation report for yam presents expert opinions about the likely future yield trends across the major producing countries in West Africa, namely: Benin, Nigeria, Ghana, Côte d'Ivoire and Togo., which together account for 95 percent of the global yam production (Food and Agricultural Organisation [FAO], 2024)[1]. The expert consultations were conducted virtually to update and validate yam yield projections within the economic modelling tools employed by the Foresight and Metrics Initiative.

Global yam production is concentrated in West Africa. In 2020/22, Africa accounted for 98 percent of the global production and West Africa constituted 95 percent (FAOSTAT, 2024). In the same period, Nigeria contributed 71 percent, Ghana 11 percent, Côte d'Ivoire 9 percent, Benin 4 percent, and Togo 1 percent to the Africa's yam production. Yam production in Africa has grown from 7.9 million tons in 1961/63 to 83.9 million tons in 2020/22. The production grew over 10 times from 1961/63 to 2020/22 and is primarily due to expanded cultivated acreage rather than improvements in yields. During this period, the acreage increased 9.2 times from 1.1 million ha to 10 million ha, while yam yields increased 1.2 times from 7.2 tons/ha to 8.3 tons/ha.

Yam yields vary significantly among the producing countries in Africa. In 2020/22, Ghana had the highest yields at 18.3 tons/ha, followed by Benin with 13.1 tons/ha, Togo with 9.0 tons/ha, Nigeria with 8.0 tons/ha, and Côte d'Ivoire with 5.5 tons/ha (FAOSTAT, 2024). These substantial yield variations across Africa underscore the considerable potential for enhancing yam productivity in Africa. Under ideal conditions and management practices, the average yield for yams is typically around 15 to 25 tons/ha[2].

Given the current productivity levels, prioritizing yam in global models is crucial for generating actionable evidence for policymakers and donors. By highlighting yam's potential and yield trends, we can inform decision-making, optimize resource allocation, and drive agricultural development, ultimately enhancing crop quality, food security, and sustainable livelihoods.

This report is organized into six main sections. The next section provides the background, followed by a methodology section outlining research design, data collection, and analysis. The expert

[1] The Food and Agricultural Organisation (FAO) Statistical data was accessed on September, 2024 and the figures in this report were presented based on 3-year moving averages.
[2] Crop Management Practices-An Agricultural Extension Initiative of Indorama, accessed from https://www.indoramafertilizers.com/image/crop-practice-yam.pdf on the 3rd December, 2024.

validation section presents the validation process, including country-wise expert feedback from five countries: Benin, Nigeria, Ghana, Côte d'Ivoire and Togo. The report then summarizes the key outcomes of the expert validation exercise, highlighting the prospects of yam productivity growth in West Africa for 2030, 2040 and 2050. Finally, the report concludes with key findings and policy implications.

2 Methods

The expert validation exercise for the intrinsic productivity growth rates (IPRs) for yam was conducted virtually on the 20th of November 2024. The consultation process drew experts from the International Institute of Tropical Agriculture (IITA) working at the regional level, as well as experts from the national programs. IITA experts provided their opinion on cassava yields and related factors in Benin, Nigeria, Ghana, and Togo, while national experts provided their opinion on cassava yields and related factors in Côte d'Ivoire. These experts comprised plant breeders, agronomists, physiologist, phytopathologist, biometricians, and social scientists including agricultural economists.

Preparations for the exercise involved deciding about the setting required to conduct the interviews, reviewing the objectives and procedures of the expert interview, and assigning tasks. Preparations further involved summarising time series data on yam production, yields and acreage from the FAO for the period 1961 to 2022 (FAOSTAT, 2024). Future productivity rates, known as growth IPRs, were derived using the IMPACT model and were retrieved using the IPR tool (Orozco Ceron et al., 2024). Subsequently, PowerPoint presentations were prepared to illustrate past trends in production, yields and acreage, as well as the projected yields from the IMPACT model. Furthermore, the preparations involved deciding on approaches for presenting the historical data and projections, identifying possible experts to be interviewed; and synthesizing the information acquired from the experts.

2.1 Expert Validation

The expert validation session was conducted virtually on 20th November 2024. During the session, facilitators presented historical data on yam production, acreage, and yield, as well as the IMPACT model's projections for each targeted yam-producing country: Benin, Nigeria, and Ghana. Presentations for Côte d'Ivoire and Togo were given to two IITA experts who were to engage with the respective national experts and gathered opinions for a representative national perspective. The presentations aimed to provide a thorough understanding of yam production trends and potential future scenarios, supporting the validation of the IPRs.

The experts from the respective countries were asked to provide written feedback on their expert opinions on two key questions as follows:

1) Given research efforts and past experiences on how yields have evolved, what would the yam yields be by 2030, 2040, and 2050? Would yields increase, decrease, or stagnate (remain more or less the same as in 2022)? Why?

2) The global model, IMPACT, shows future trends in yam yields. How would you relate your expectations to those of IMPACT? Indicate whether and why your expectations correspond with any or none of the three scenarios.

3 Country-wise Expert Feedback

3.1 Benin

During the consultations, the facilitators presented Figure 1 showing the historical trends of Benin's yam production, yields and acreages from 1961 to 2022.

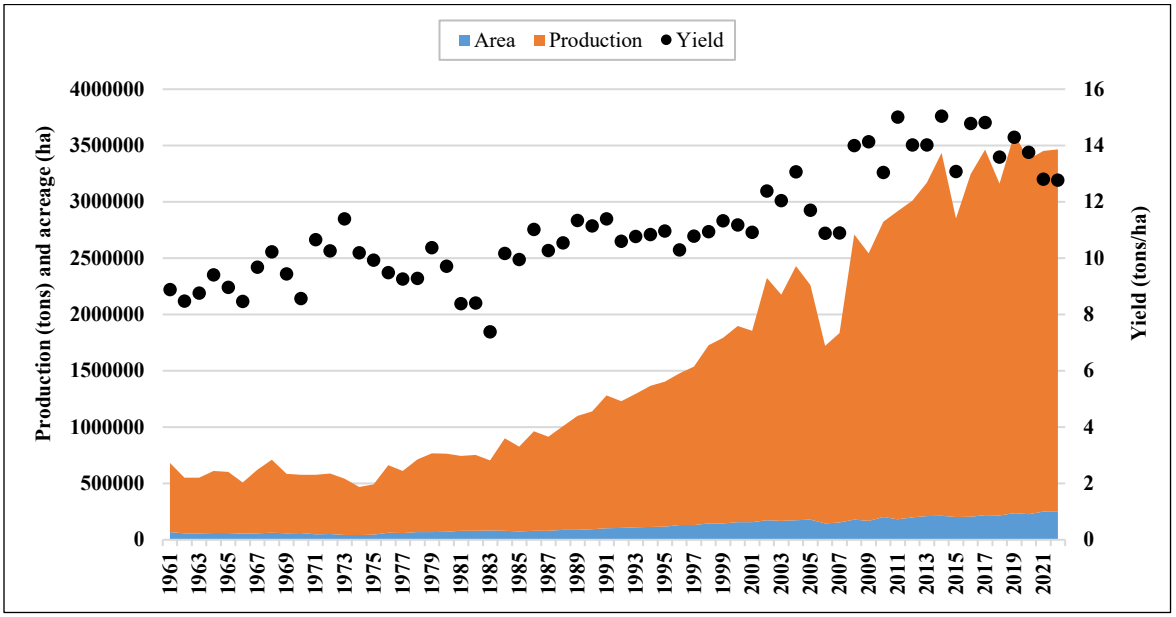

Figure 1: Historical trends in yam yields, acreage, and production in Benin
Source: Authors using data from (FAOSTAT, 2024)

Using Figure 1, the experts were informed that Benin's annual yam production increased from annual moving average production of 534,810 tons in 1961/63 to 3,189,434 tons in 2020/22. The production growth is more associated with increases in acreage than yields. More specifically, annual yam production increased about 6 times between 1961/63 and 2019/21. Over that same period, annual yam acreage increased about 3 times between 1961/63 and 2020/22, while average yam yields increased 1.5 times. Therefore, we can conclude that increasing acreage contributed more to growth in yam production compared to yam yields. Figure 2 was also presented to show the historical trends in Benin's yam yields.

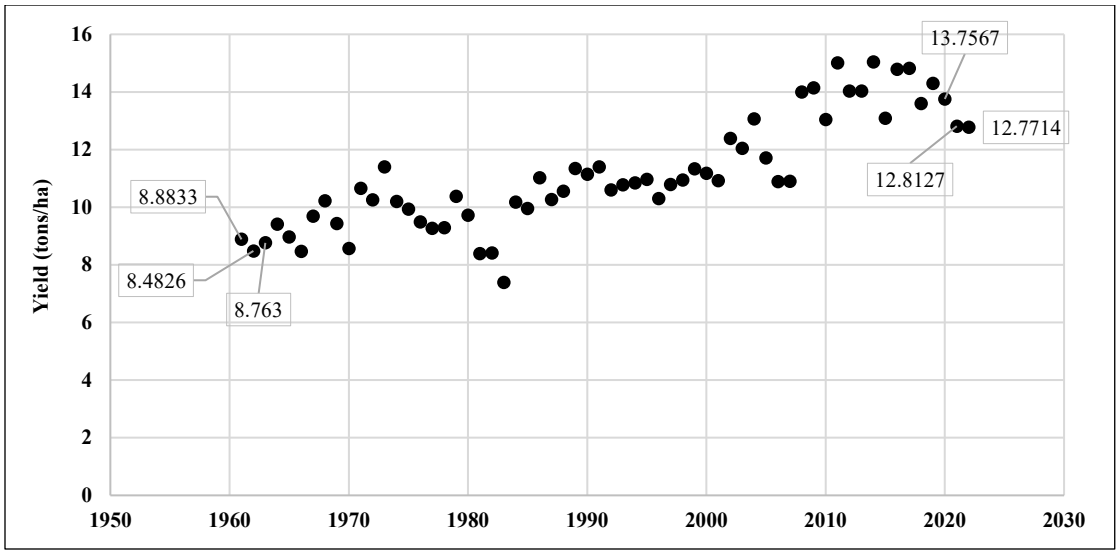

Figure 2: Historical trends in yam yields in Benin (1961-2022)
Source: Authors using data from (FAOSTAT, 2024)

Based on Figure 2, the facilitators explained to the experts that Benin's yam yields increased 1.5 times from 8.7 tons/ha in 1961/63 to 13.1 tons/ha in 2020/22. Considering research efforts and the past experiences on how yields have evolved, experts were asked whether crop yields would increase, decrease, or remain constant (that is, at 13.1 tons/ha as in 2020/22) in 2030, 2040 and 2050, and to provide justifications for their opinions.

The experts expect a continued increase in yam yields for Benin from 2030 to 2050. Key factors driving this growth include rising yam value and production, leading to higher prices, the upcoming introduction of new yam varieties, and the strategic shift of cultivation from forest to savanna areas, resulting in enhanced production. In addition, the experts highlighted the need for Benin to address key constraints, including seed availability and affordability, as well as soil fertility issues. Lastly, the facilitators presented the future yam yields projected from the IMPACT model (Figure 3).

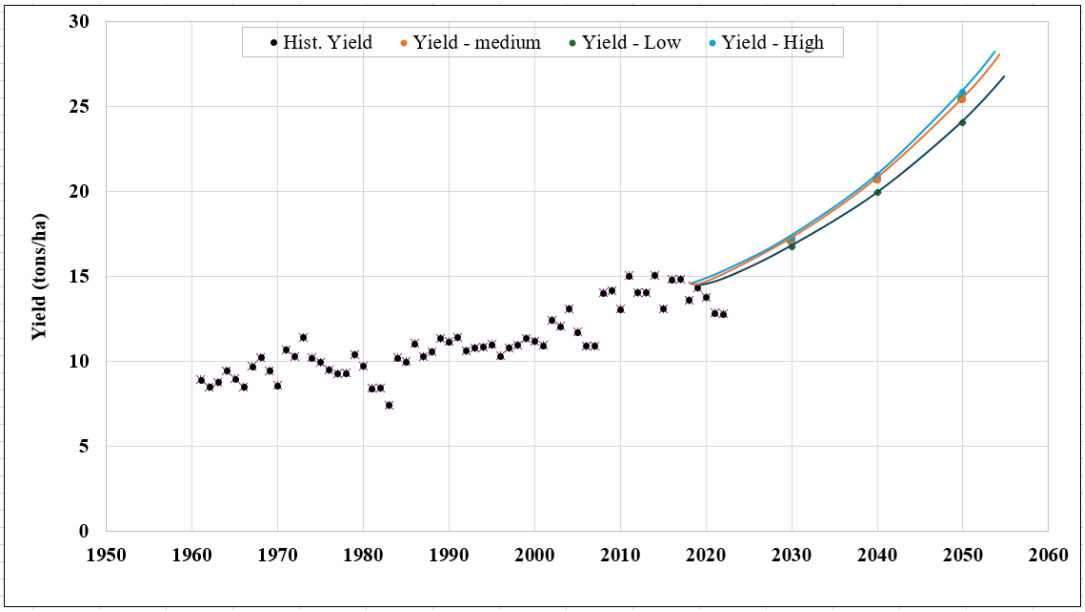

Figure 3: Past and future trends in yam yields in Benin (2030, 2040 and 2050)
Source: authors using data from (FAOSTAT, 2024; Orozco Ceron et al., 2024)

Figure 3, which shows yam yield projections from the IMPACT model for 2030, 2040 and 2050, suggests that Benin's yam yields will continue rising. More specifically, the projections indicate that the average annual yield will increase from 11.6 tons/ha in 2020/22 to a range of 16.72-17.21 tons/ha by 2030. The yields are expected to rise further to a range of 19.93-20.95 tons/ha by 2040 and 24.04-25.82 tons/ha by 2050. Subsequently, the experts reviewed Table 1, which provides projected low, medium, and high crop yam yields for all climate change scenarios in the IMPACT model. The experts were then asked to compare their own expectations with the IMPACT model projections, considering whether their views were aligned with any of the three scenarios.

The experts generally agreed with the high-level yield projections from the IMPACT model (See Table 1). However, they argued that Benin would not achieve the projected 25 tons/ha by 2050 unless several factors were addressed: rising soil temperatures in Northern Benin due to climate change, seed availability and affordability, deteriorating soil fertility, land shortage, population pressure, the promotion of other sectors like cotton and maize over yam, and the movement of people from difficult areas to new land.

Table 1: Projected yam yields in Benin for 2030, 2040 and 2050

Year	**Yield - low (tons/ha)**	**Yield - medium (tons/ha)**	**Yield - high (tons/ha)**	**Expectations (tons/ha)**
2030	16.72	17.02	17.21	17
2040	19.93	20.65	20.95	21
2050	24.04	25.36	25.82	22

Source: authors using data from expert consultations and (Orozco Ceron et al., 2024)

3.2 Nigeria

During the consultations, the facilitators presented Figure 4 showing the historical trends of Nigeria's yam production, yields and acreages from 1961 to 2022.

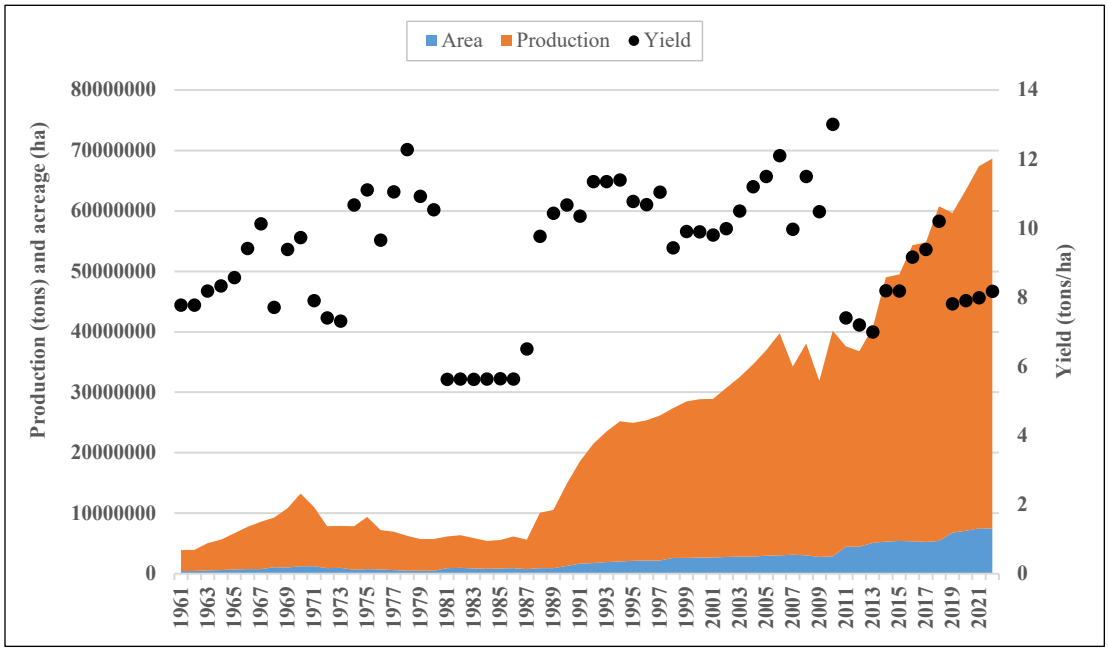

Figure 4: Historical trends in yam yields, acreage, and production in Nigeria
Source: Authors using data from (FAOSTAT, 2024)

Using Figure 4, experts were informed that Nigeria's yam production has increased from annual moving average production of 3.8 million tons in 1961/63 to 59 million tons in 2020/22. The growth in production is mainly attributed to increases in acreage than yields. More specifically, average annual yam production increased 15.4 times between 1961/63 and 2020/22. During the same period, acreage increased by 15.2 times compared to yields which increased one-fold. As such, it can be concluded that increasing acreage contributed to growth in Nigeria's yam production more than yields. Figure 11 was also presented to show the historical trends in Nigeria's yam yields.

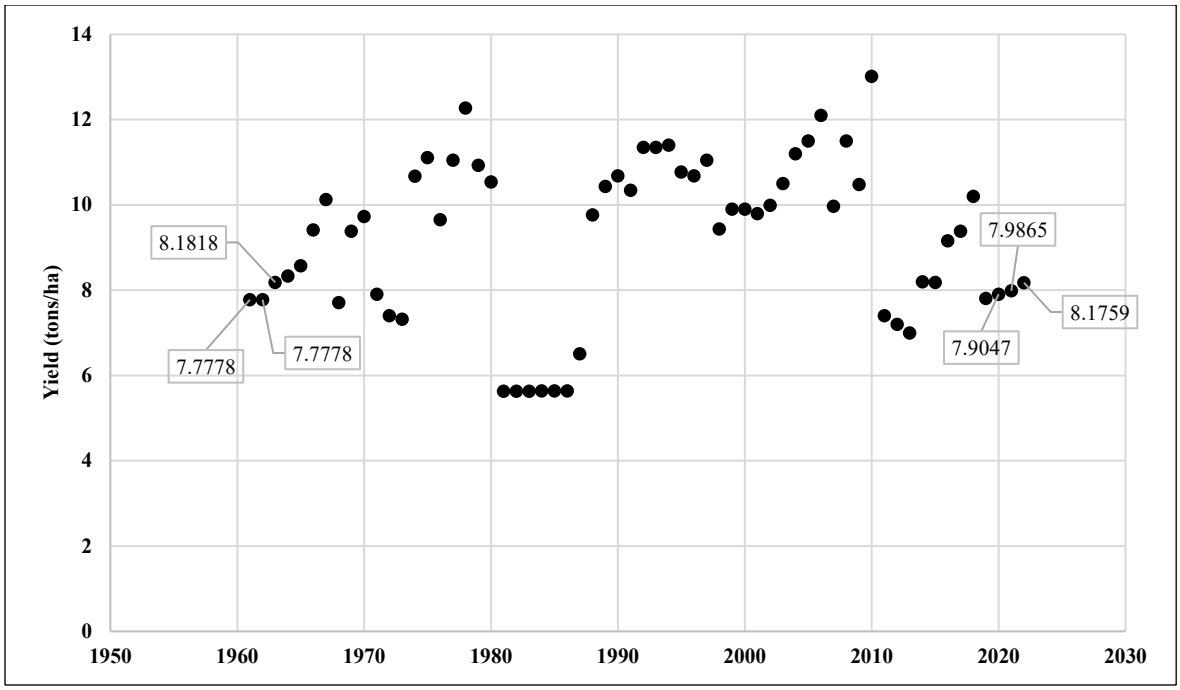

Figure 5: Historical trends in yam yields in Nigeria (1961-2022)
Source: Authors using data from (FAOSTAT, 2024)

Based on Figure 5, the facilitators explained to experts that Nigeria's yam yields remained the same over the period from 1961/63 (7.93 tons/ha) to 2020/22 (8.02 tons/ha). More specifically, there was no consistent growth trend, suggesting periods of both increase and decline. Considering research efforts and the past experiences on how yields have evolved, experts were asked whether crop yields would increase, decrease, or remain constant (that is, at 8.02 tons/ha as in 2020-2022) in 2030, 2040 and 2050, and to provide justifications for their opinions.

The experts expect a sustained increase in annual yam yields in Nigeria. This growth is driven by several key factors, including rigorous seed development and multiplication initiatives, innovations such as the use of fertilizers for yams, and the adoption of improved varieties that are resilient to climate change. Lastly, the facilitators presented Figure 6 to show the future yam yield projections from IMPACT model.

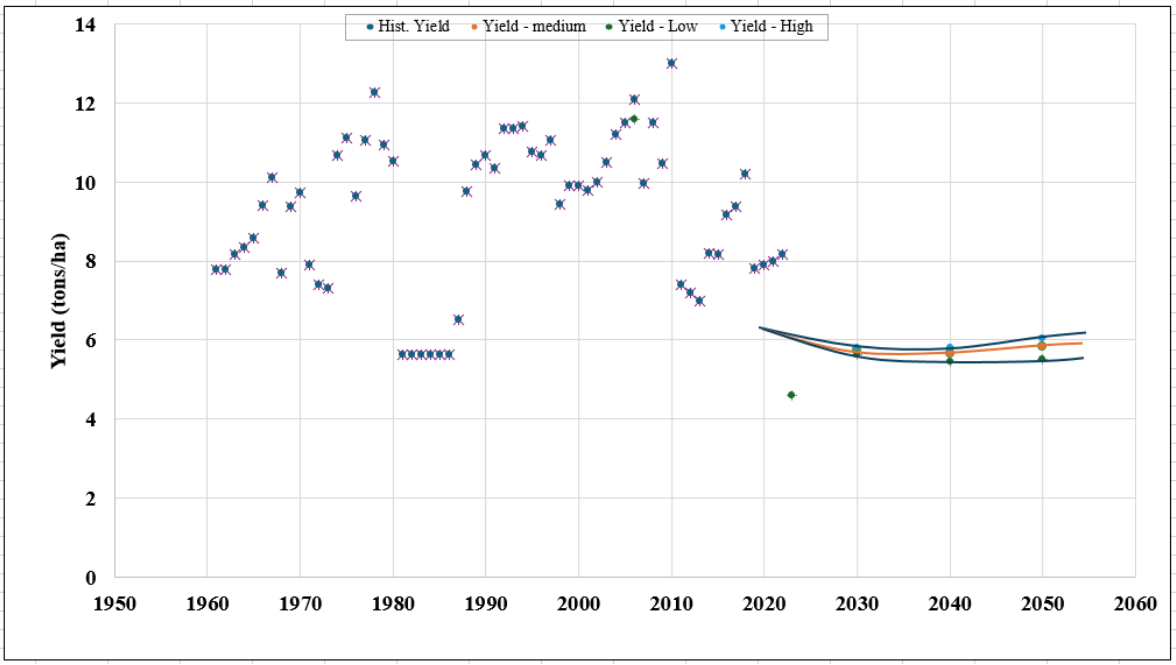

Figure 6: Past and future trends in yam yields in Nigeria (2030, 2040 and 2050)
Source: authors using data from (FAOSTAT, 2024; Orozco Ceron et al., 2024)

Based on Figure 6, Nigeria's annual yam yields are projected to remain below 8.02 tons/ha by 2030, 2040 and 2050, consistent with the levels observed in 2020/22. More specifically, the projections imply a decline in the annual moving average yields by 2030 (5.64-5.82 tons/ha) compared to 8.02 tons/ha in 2020/22. By 2040 and 2050, the moving average yields are expected to decline further to 5.46-5.80 tons/ha and 5.52-6.04 tons/ha, respectively. Subsequently, the expert panel reviewed Table 2, which presents the projected low, medium, and high yam yields for all climate change scenarios in the IMPACT model. The experts were then asked to compare their own expectations with the IMPACT model forecasts, considering whether their views were aligned with any of the three scenarios.

The experts expect yam yields in Nigeria to be much higher than the yield projections from IMPACT. They provided their own expectations (See Table 2) and cited several reasons. Enhanced seed systems and breeding programs such as Yam Improvement for Income and Food Security in West Africa (YIFSWA), Roots, Tubers, and Bananas (RTB), and Program for Seed System Innovation for Vegetatively-propagated Crops in Africa (PROSSIVA) will lead to increased yields. In addition, innovations such as the use of fertilizers with yam are expected to offset losses from various constraints, resulting in increased future yields. Finally, water yam production is also on the rise due to promotion and awareness efforts, its resilience to soil fertility issues and climate change, and growing demand comparable to that for white yam. Key constraints include quality seed availability, soil fertility, and climate change (drier climate), with insecurity pushing agriculture towards peri-urban areas; improved security could allow production to return to more fertile lands.

Table 2: Projected yam yields in Nigeria for 2030, 2040 and 2050

Year	Yield - low (tons/ha)	Yield - medium (tons/ha)	Yield - high (tons/ha)	Expectations (tons/ha)
2030	5.64	5.75	5.82	12
2040	5.46	5.66	5.80	14
2050	5.52	5.83	6.04	16

Source: authors using data from expert consultations and (Orozco Ceron et al., 2024)

3.3 Ghana

During the consultations, the facilitators presented Figure 7 showing the historical trends of Ghana's yam production, yields and acreages from 1961 to 2022.

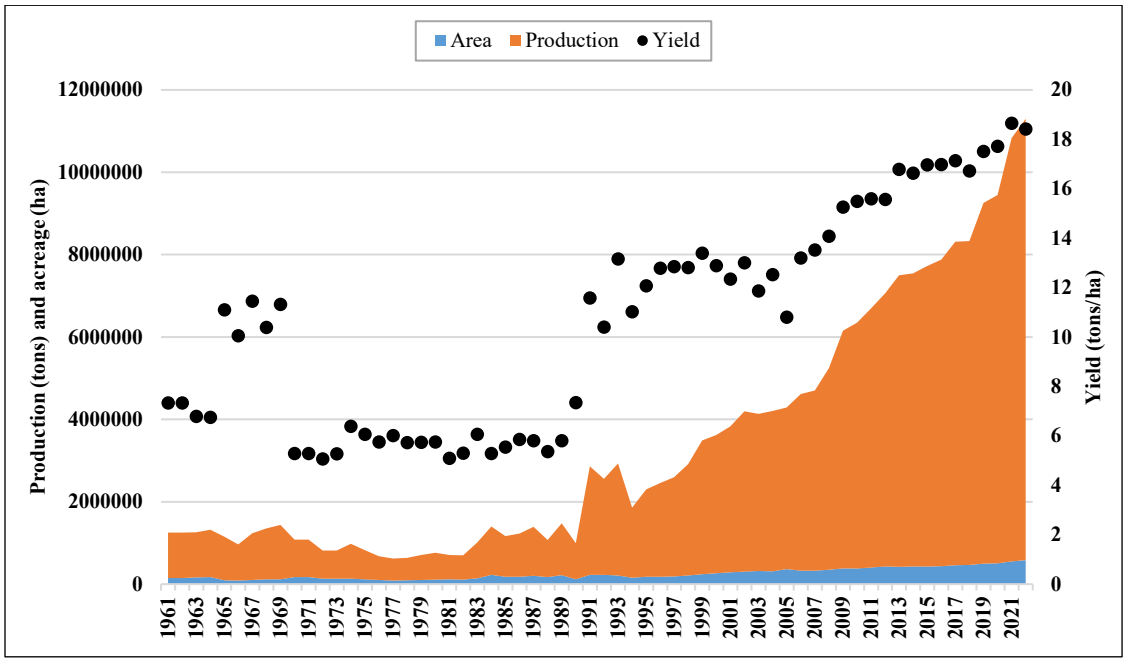

Figure 7: Historical trends in yam yields, acreage, and production in Ghana
Source: Authors using data from (FAOSTAT, 2024)

Using Figure 7, the experts were informed that Ghana's annual yam production has increased from annual moving average production of 1 million tons in 1961/63 to about 10 million tons in 2020/22. The growth in annual production is more associated with increases in acreage than yields. More specifically, annual yam production increased over 9 times between 1961/63 and 2020/22. Over that same period, annual yam acreage increased 3.5 times compared to 2.6 times for yields. Therefore, we can conclude that increasing acreage contributed more to growth in yam production than yields. Figure 8 was also presented to show the historical trends in Ghana's yam yields.

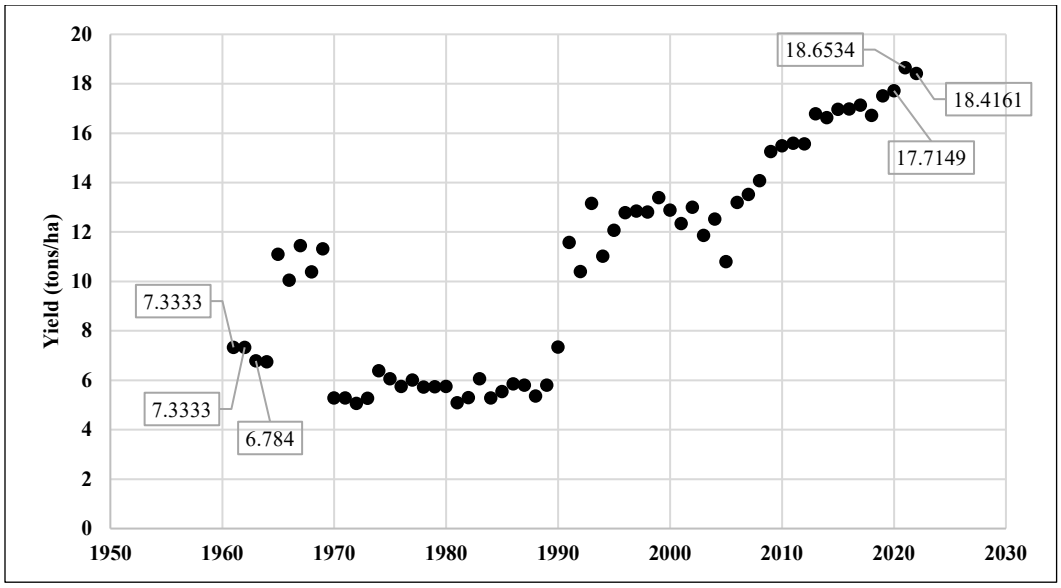

Figure 8: Historical trends in yam yields in Ghana (1961-2022)
Source: Authors using data from (FAOSTAT, 2024)

Based on Figure 8, the facilitators demonstrated to experts that yam yields in Ghana increased 2.6 times from 7.14 ton/ha in 1961/63 to 18.28 tons/ha in 2020/22. Considering research efforts and the past experiences on how yields have evolved, experts were asked whether the crop yields would increase, decrease, or remain constant (that is, at 18.28 tons/ha for 2020/22) in 2030, 2040 and 2050, and to provide justifications for their opinions.

The experts expect that Ghana, as a net exporter of yams, will achieve continued growth in annual yam yields due to several key factors, include: increased farmers' awareness of seed availability, promoting on of seed turnover on farms, and improvements in soil fertility. In addition, the adoption of export-targeted yam varieties is also expected to contribute to future yields increases However, to sustain this growth through to 2050, Ghana must address critical factors such as soil fertility, production challenges in the central and northern savanna regions, and the short shelf-life of yams. Lastly, the facilitators presented Figure 9 to show the future yield projections from the IMPACT model.

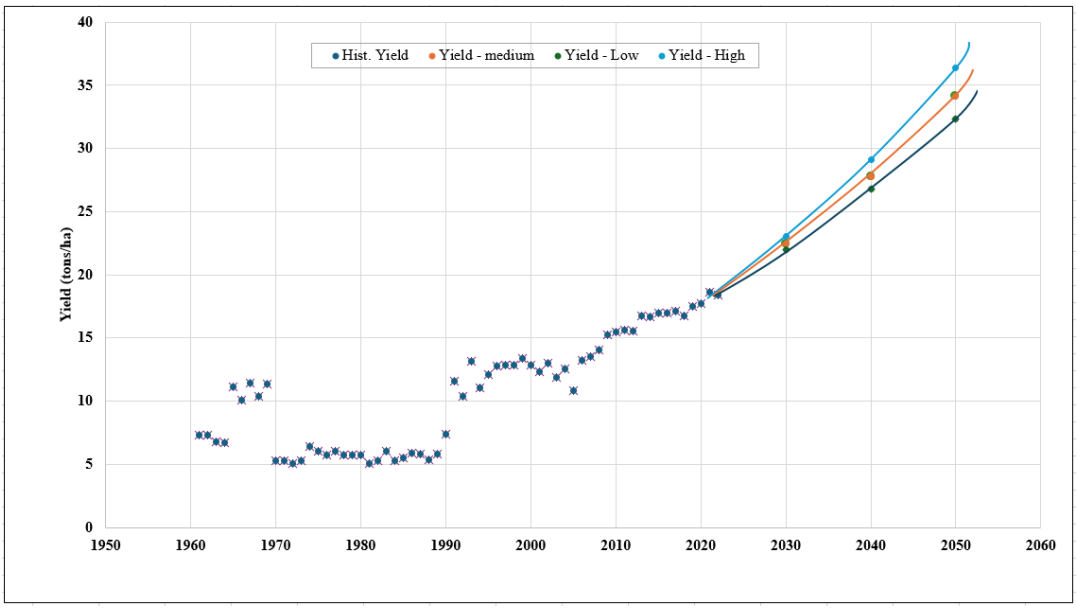

Figure 9: Past and future trends in yam yields in Ghana (2030, 2040 and 2050)
Source: authors using data from (FAOSTAT, 2024; Orozco Ceron et al., 2024)

Based on Figure 9, Ghana's yam yield projections from IMPACT are expected to increase from the average annual yield of 18.28 tons/ha in 2020/22 to 22.00-23.04 tons/ha by 2030. The projected yields would rise further to 26.76-29.12 tons/ha by 2040, and 32.29-36.39 tons/ha by 2050. Subsequently, the experts reviewed Table 3, which presents projected low, medium, and high yam yields for low, medium, and high scenarios for all climate change scenarios in the IMPACT model. The experts were then asked to compare their own expectations with the IMPACT model forecasts, considering whether their views were aligned with any of the three scenarios.

The experts expect slightly higher future yields than the yield projections from IMPACT, and provided their own expectations (See Table 3). They cited successful interventions, transformative changes such as improved yield, mechanization, and optimized plant population. They emphasized the need for further improvements to ensure that the current potential yields of 30 tons/ha are exceeded. The experts also highlighted issues to consider:

- Evaluate the value of crops (cereals vs. yam and cassava) in terms of their contributions to food security and income/poverty to ensure a fair comparison.
- FAO data lacks coverage for countries like Sierra Leone and Tanzania, despite yam cultivation in these regions, suggesting potential bias.
- Donors and other stakeholders often prioritize cereals over root, tuber, and banana crops (RTBs).
- Address inconsistencies in yield measurement.
- Donors are interested in expanding yam production across regions and the continent.

Table 3: Projected yam yields in Ghana for 2030, 2040 and 2050

Year	Yield - low (tons/ha)	Yield - medium (tons/ha)	Yield - high (tons/ha)	Expectations (tons/ha)
2030	22.00	22.43	23.04	25
2040	26.76	27.77	29.12	30
2050	32.29	34.10	36.39	37

Source: authors using data from expert consultations and (Orozco Ceron et al., 2024)

3.4 Togo

The facilitators presented Figure 10 showing the historical trends of Togo's annual yam production, yields and acreages from 1961 to 2022.

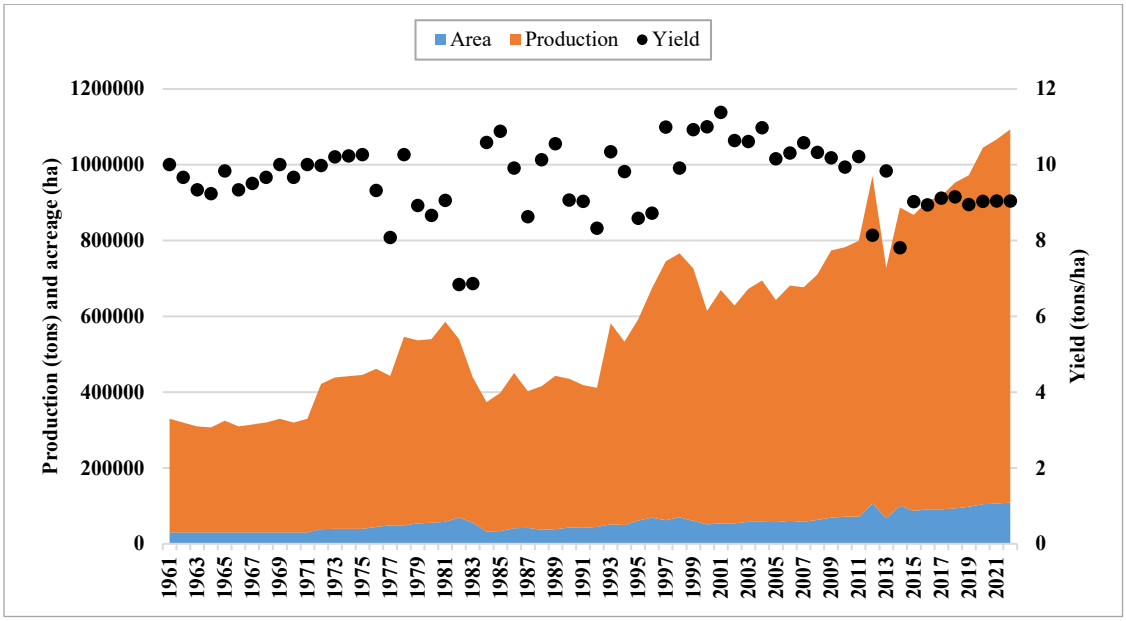

Figure 10: Historical trends in yam yields, acreage, and production in Togo
Source: Authors using data from (FAOSTAT, 2024)

Using Figure 10, the experts were informed that annual yam production for Togo increased from annual moving average production of 290,000 tons (in 1961/63) to 961,974 tons (in 2020/22). The growth in production is more associated with increase in acreage than yields. More specifically, average annual yam production increased about 3.3 times between 1961/63 (moving average) and 2020/22 (moving average). During the same period, acreage increased 3.5 times, while average annual yields decreased 0.9 times. Therefore, we can conclude that increasing acreage contributed more to growth in yam production compared to decreasing yields. Figure 11 was also presented to show the historical trends in Togo's yam yields.

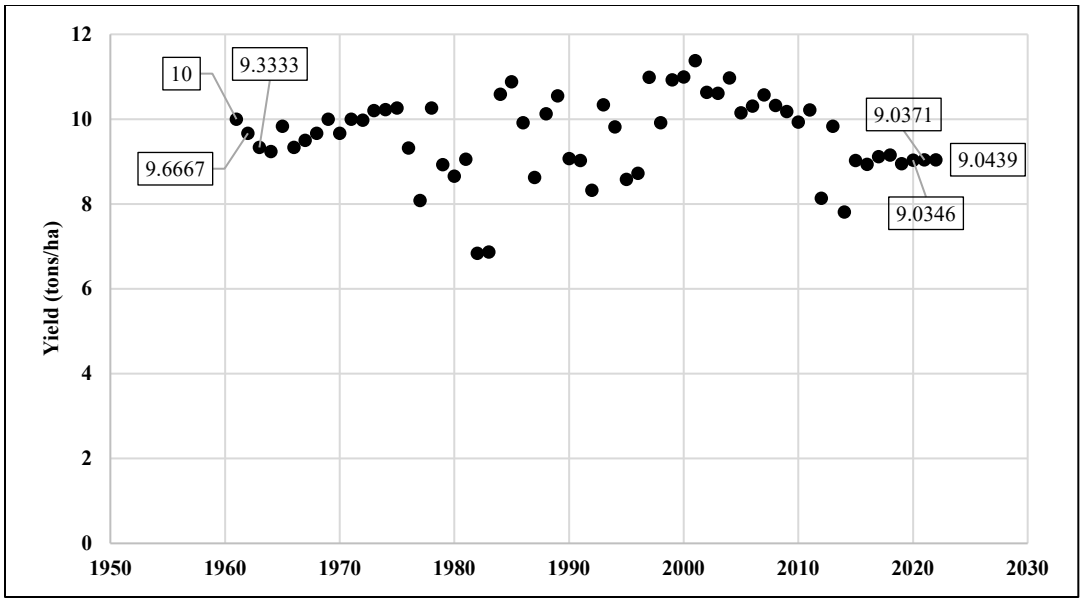

Figure 11: Historical trends in yam yields in Togo (1961-2022)
Source: Authors using data from (FAOSTAT, 2024)

Using Figure 11, the facilitators explained to experts that Togo's yam yields decreased 0.9 times from 9.67 tons/ha in 1961/63 to 9.04 tons/ha in 2020/22. Considering research efforts and the past experiences on how yields have evolved, experts were asked whether the yields would increase, decrease, or remain constant (that is, 9.04 tons/ha for 2020/22) in 2030, 2040 and 2050, and to provide justifications for their opinions.

The experts expect a steady increase in Togo's yam yields by 2030, 2040, and 2050, driven by key factors such as ongoing investments by the Togolese Institute for Agricultural Research (ITRA), leading to improved yields. Additionally, farmers across the country are gaining access to affordable seeds of improved yam varieties, which boast resistance to viral and fungal diseases, as well as drought tolerance, and can thrive in less fertile soils, offering a superior taste and yields of up to 15 tons/ha. Furthermore, initiatives to facilitate access to irrigation technologies for farmers in areas requiring supplementary irrigation are also expected to contribute to the anticipated yield increases. Lastly, the facilitators presented Figure 12 to show the future yield projections from the IMPACT model.

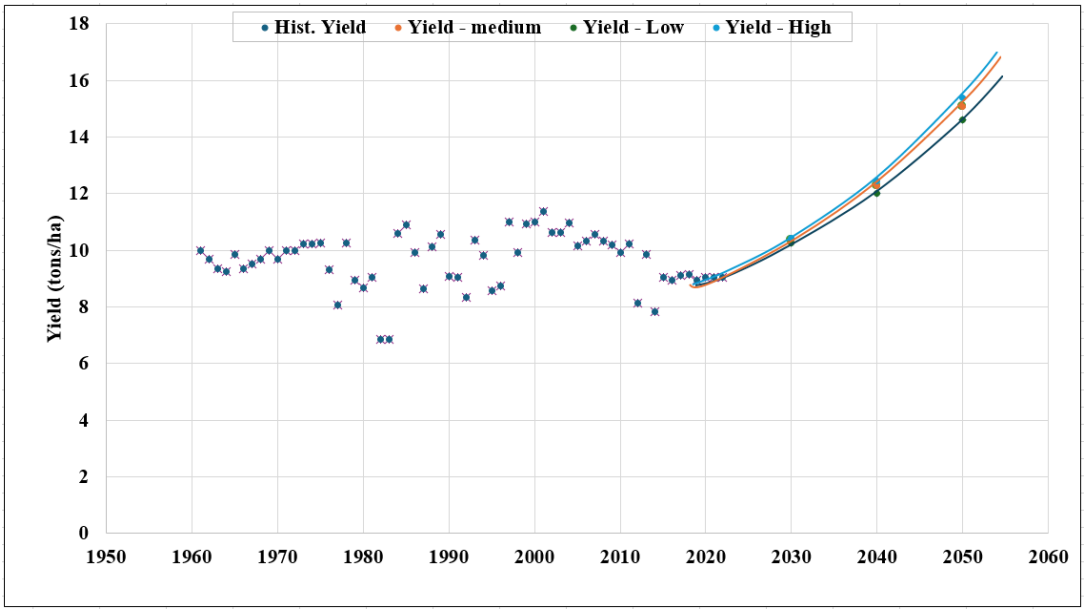

Figure 12: Past and future trends in yam yields in Togo (2030, 2040 and 2050)
Source: authors using data from (FAOSTAT, 2024; Orozco Ceron et al., 2024)

Figure 12 shows that Togo's yam yield projections from IMPACT would rise from 9.04 tons/ha in 2020/22 to a range of 10.24 tons/ha to 10.42 tons/ha by 2030. The annual yields are expected to rise further by 2040 (24.75-25.22 tons/ha) and 2050 (24.9-25.72 tons/ha). Subsequently, the experts reviewed Table 4, which presents projected low, medium, and high Yam yields for all climate change scenarios in the IMPACT model. The experts were then asked to compare their own expectations with the IMPACT model projections, considering whether their views were aligned with any of the three scenarios. The experts expect the future yields to be slightly higher than the yield projections from IMPACT (see Table 4), Experts contended that Togo can achieve yields exceeding 20 tons/ha if the following challenges are decisively addressed: seed availability and affordability, soil fertility, post-harvest losses, diseases, and short shelf life.

Table 4: Projected yam yields in Togo for 2030, 2040 and 2050

Year	Yield - low (tons/ha)	Yield - medium (tons/ha)	Yield - high (tons/ha)	Expectations (tons/ha)
2030	10.24	10.34	10.42	11
2040	12.02	12.28	12.45	14
2050	14.59	15.09	15.39	16

Source: authors using data from expert consultations and (Orozco Ceron et al., 2024)

3.5 Côte d'Ivoire

The national experts from Côte d'Ivoire who participated in the consultation process included two yam breeders, a physiologist, a phytopathologist, and an agronomist. The facilitators presented Figure 7 showing the historical trends of Côte d'Ivoire's yam production, yields and acreages from 1961 to 2022.

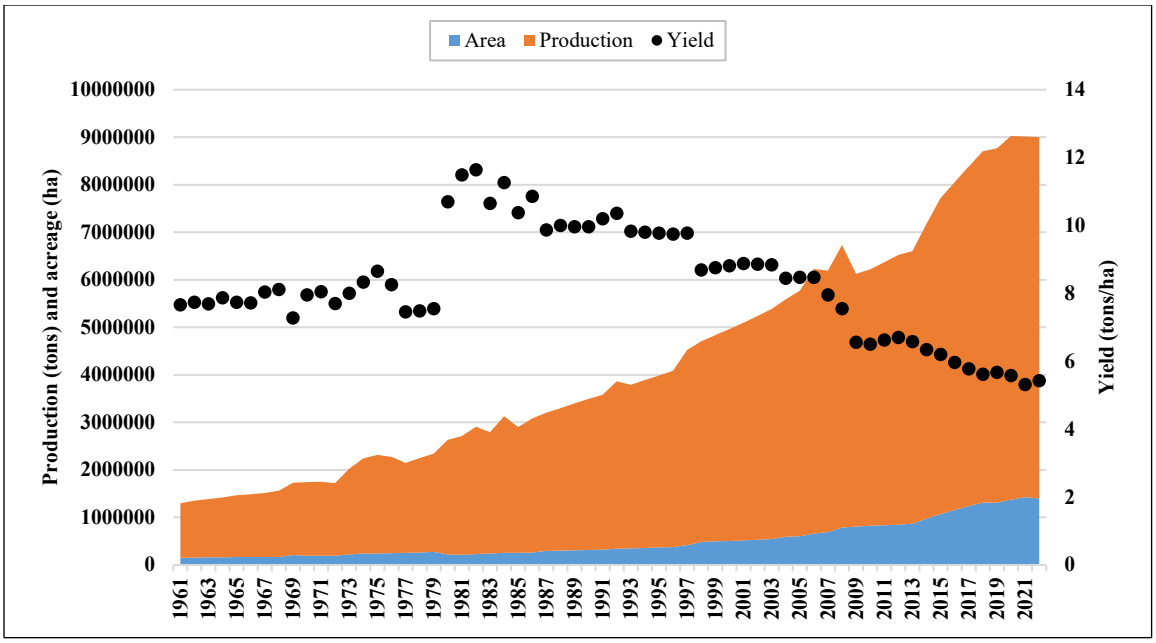

Figure 13: Historical trends in yam yields, acreage, and production in Côte d'Ivoire
Source: Authors using data from (FAOSTAT, 2024)

Using Figure 13, the experts were informed that Côte d'Ivoire's annual yam production grew from annual moving average production of 1.2 million tons in 1961/1963 to 7.6 million tons in 2020/22. The production growth is mainly attributed to increases in acreage and not yields. Annual yam production increased 6.4 times between 1961/1963 and 2020/22. Over the same period, acreage increased 9 times, while yields decreased 0.7 times. Thus, it can be concluded that increasing acreage contributed to growth in yam production more than decreasing yields. Figure 14 was also presented to show the historical trends in Côte d'Ivoire's yam yields.

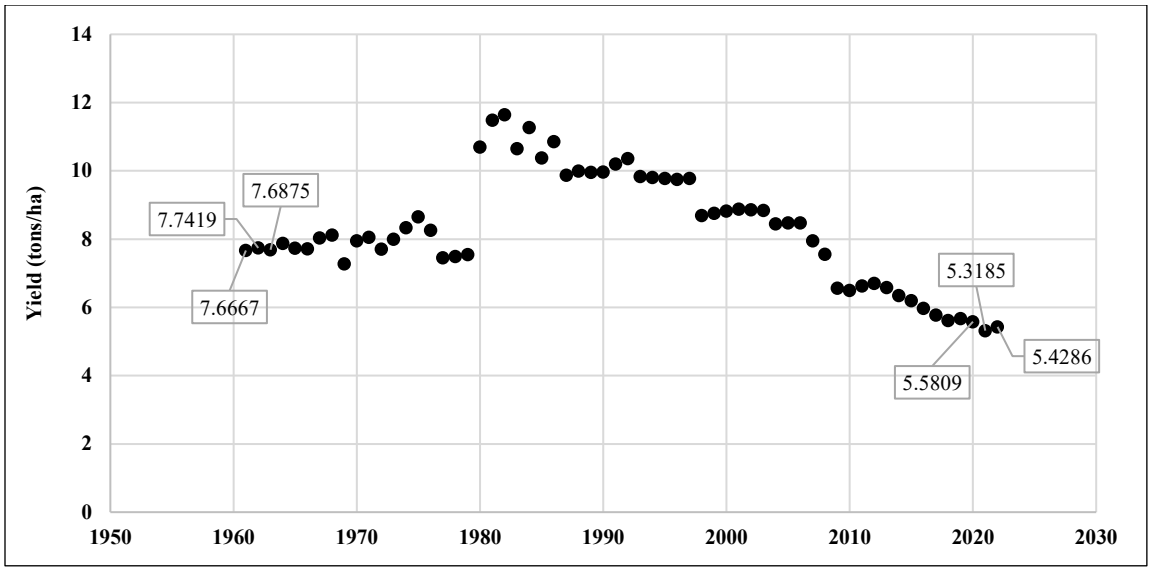

Figure 14: Historical trends in yam yields in Côte d'Ivoire (2011-2022)
Source: Authors using data from (FAOSTAT, 2024)

Based on Figure 14, the facilitators explained to experts that yam yields decreased 0.7 times from 7.7 tons/ha in 1961/63 to 5.4 tons/ha in 2020/22. Considering research efforts and the past experiences on how yields have evolved, the experts were asked whether the crop yields would increase, decrease, or remain constant (that is, at 5.4 tons/ha for 2020/22) in 2030, 2040 and 2050, and to provide justifications for their opinions.

The experts expect that yam yields in Côte d'Ivoire will continue to grow through 2030, 2040, and 2050. This growth will be primarily driven by the state's objective to increase production by 7 percent each year. Consequently, yields are expected to rise from 5 tons/ha to between 10 and 15 tons/ha over this period. Achieving these targets will depend on the acquisition and availability of quality seeds and the use of improved yam varieties. Lastly, the facilitators presented Figure 15 to show the future yield projections from the IMPACT model.

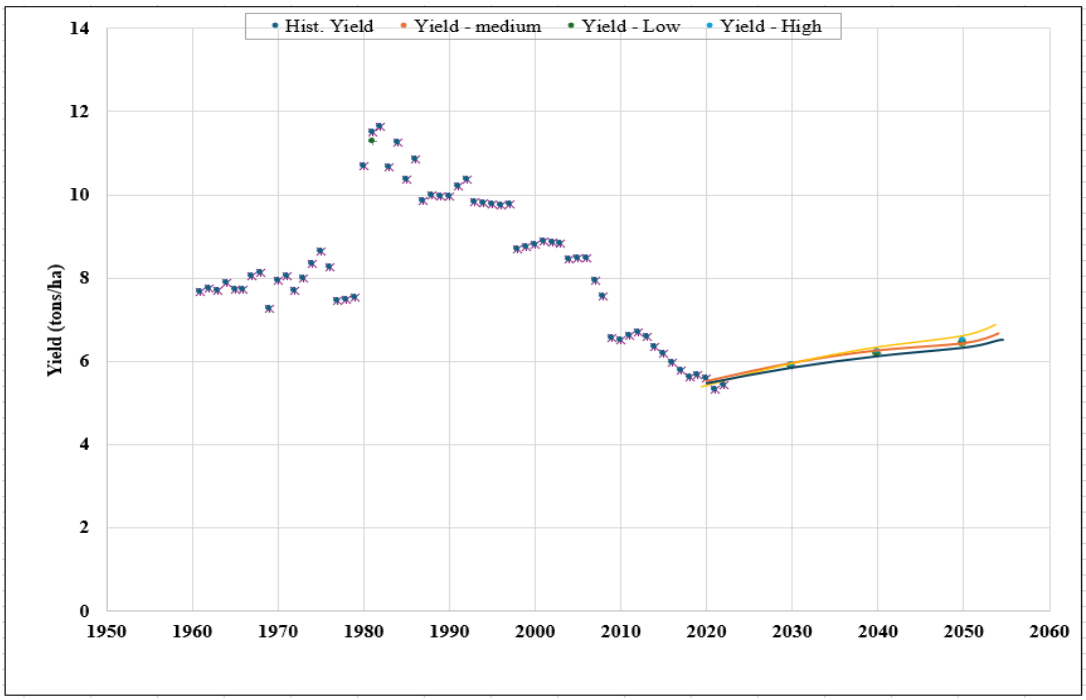

Figure 15: Past and future trends in yam yields in Côte d'Ivoire (2030, 2040 and 2050)
Source: authors using data from (FAOSTAT, 2024; Orozco Ceron et al., 2024)

Using Figure 15, Côte d'Ivoire's projected yields from IMPACT suggest that the projections would rise from the average annual yield of 5.4 tons/ha (in 2020/22) to 6.45-6.52 tons/ha by 2030. The yield projections would rise further by 2040 (6.20-6.25 tons/ha) and 2050 (6.45-6.52 tons/ha). Subsequently, the experts reviewed Table 5, which presents the projected low, medium, and high yam yields for low, medium, and high scenarios for all climate change scenarios in the IMPACT model. The experts were then asked to compare their own expectations with the IMPACT model forecasts, considering whether their views were aligned with any of the three scenarios.

The experts expect that future yields in Côte d'Ivoire will surpass those projected by the IMPACT model. They provided their own projections (see Table 5), and cited several reasons. Yam is the leading food crop in Côte d'Ivoire, with an annual production of nearly 8 million tonnes. It has also transitioned from subsistence farming to a significant agricultural economy, with many populations relying on the yam trade. The crop's market value can reach up to 600 FCFA per kilo during shortages, generating up to 2 trillion FCFA annually. Besides its economic importance, yam significantly contributes to food security, feeding nearly 60 percent of the national population. Côte d'Ivoire also has the highest per capita yam consumption, exceeding 160 kg per capita per year.

Table 5: Projected yam yields in Côte d'Ivoire for 2030, 2040 and 2050

Year	Yield - low (tons/ha)	Yield - medium (tons/ha)	Yield - high (tons/ha)	Expectations (tons/ha)
2030	5.90	5.89	5.93	6
2040	6.20	6.19	6.25	10
2050	6.45	6.43	6.52	15

Source: authors using data from expert consultations and (Orozco Ceron et al., 2024)

4 Key Outcomes of the Expert Validation

The expert validation had two key outcomes. First, the experts expect continued growth in yam yields in Benin, Nigeria, Ghana, Togo, and Côte d'Ivoire from 2030 to 2050. The growth in future yields is attributed to various key factors, including the introduction of improved yam varieties; increased availability and affordability of quality planting materials; use of fertilizers and improved farming practices; strategic shifts in cultivation areas; increased market demand and rising prices for yams; and government support for agriculture and specific crops such as yams. Second, while the experts' expectations for Benin's future yields were aligned to the yield projections from the IMPACT model, the experts' expectations of future yields for Nigeria, Ghana, Togo and Côte d'Ivoire were higher than the projections from IMPACT.

5 Conclusion and Policy Implications

Figure 16 presents the yield expectations from 2030 to 2050 based on the expert validation exercise.

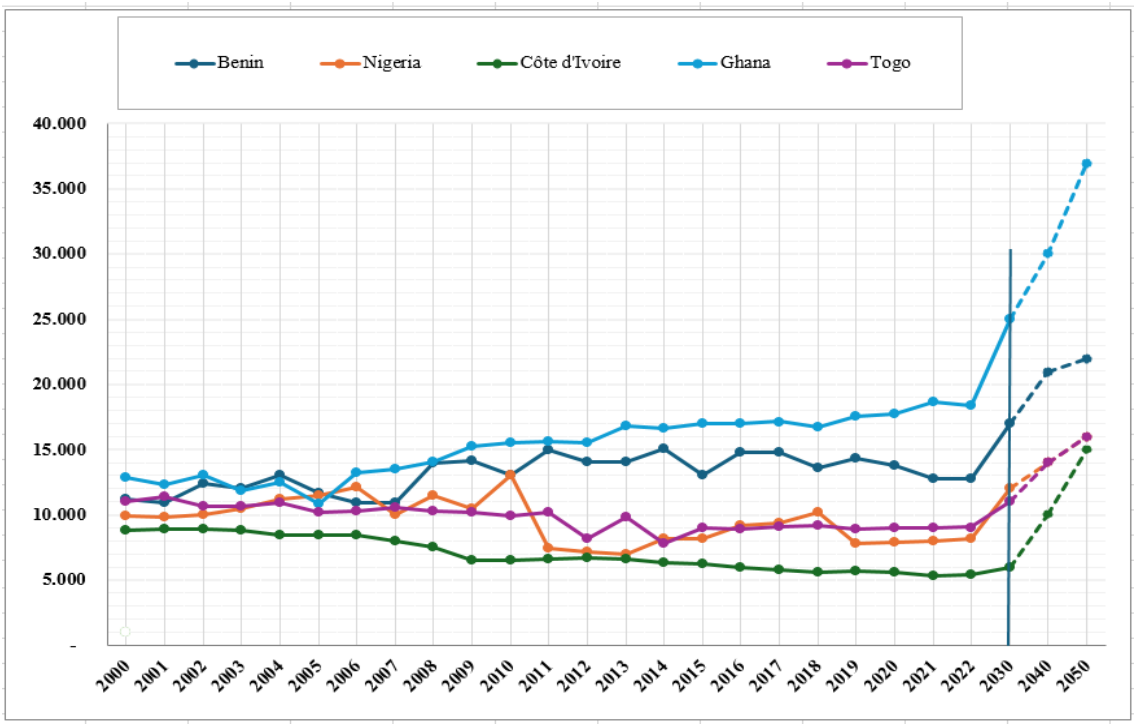

Figure 16: Past yield trends and experts' expectations of future yields of yam in West Africa
Source: Authors using data from expert consultation and (FAOSTAT, 2024)

Figure 16, which is based on the experts' opinions, highlights Ghana has the highest potential for future yield growth, followed by Benin. Furthermore, although Nigeria is the lead producer of yams both in Africa and globally, its projected yield growth lags behind, placing it in the same range as Côte d'Ivoire, Benin, and Togo, which are comparatively low producers of yams.

To fully realize the potential for future yam yield growth in West Africa, the expert validation process identified the following policy implications. First, there is need for increased availability and affordability of high-quality planting materials. Robust seed systems are essential to facilitate the swift development, multiplication and distribution of clean, improved yam varieties.

Second, given the impact of climate change, build resilience to ensure sustainable yam productivity by developing climate-resilient yam varieties, promoting agroforestry and conservation agriculture, and implementing efficient irrigation systems. In addition, provide farmers with climate information services and extension services to enhance farmer capacity on climate-resilient practices. Third, increased security in the West African region could enable production to shift back to more fertile lands, thereby boosting productivity. Fourth, evaluate the value of crops like cereals versus yams and cassava in terms of their contributions to food security and income or poverty reduction. This evaluation will help identify the most impactful crops. Additionally, stakeholders should prioritize root, tuber, and banana crops (RTBs) along with cereals.

References

Food and Agriculture Organization of the United Nations (2024). FAOSTAT statistical database, Rome, FAO.

Appendix A: List of experts for the validation exercise-Virtual meeting

Name	Institute
Asrat Amele	International Institute of Tropical Agriculture (IITA)
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Ryo Matsumoto	International Institute of Tropical Agriculture (IITA)
Paterne Agre	International Institute of Tropical Agriculture (IITA)
Patrick Olusanmi Adebola	International Institute of Tropical Agriculture (IITA)
Olufisayo Kolade	International Institute of Tropical Agriculture (IITA)
Alex Edemodu	International Institute of Tropical Agriculture (IITA)
Sika Gbegbelegbe	International Institute of Tropical Agriculture (IITA)
Alene Arega	International Institute of Tropical Agriculture (IITA)
Andrea Mjuma	International Institute of Tropical Agriculture (IITA)
Morufat Balogun	International Institute of Tropical Agriculture (IITA)
Emmanuel Kwabena Darkwa	Kwame Nkrumah University of Science and Technology (KNUST)
Pelemo Amponsah Adjei	International Institute of Tropical Agriculture (IITA)
Amponsah Adjei	Council for Scientific and Industrial Research (CSIR) – SARI, Ghana
Atnaf Beekle	South Agricultural Research Institute, Ethiopia
Prince Emmanuel Norman	West Africa Centre for Crop Improvement (WACCI), University of Ghana
Djana Mignouna	International Institute of Tropical Agriculture (IITA)
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