

IITA Youth Agripreneurs in 2017: Improved Approaches and Broader Activities



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Front cover photo

IITA Youth Agripreneurs on their rice field in Abuja, Nigeria.

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IITA Youth Agripreneurs in 2017: Improved Approaches and Broader Activities

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IITA Youth Agripreneurs in 2017: Improved approaches and broader activities

Summary

The IITA Youth Agripreneurs (IYA) are a high-profile mechanism toward strengthening youth participation in agricultural transformation through agribusiness establishment and growth. Since its exploratory startup as one group in 2012, it has grown to 13 groups with over 385 members operating 36 learning-by-doing enterprises in six countries. All members hold university degrees with 84% drawn from agriculture, business and science, and women constitute 48% of membership. Majority (66%) are pursuing the expected entrepreneurial track, but many others seek employment as business and marketing managers (10%) or regard their internships as a means toward working in rural development (15%). All of these outcomes are considered positive but only business startup offers opportunity for direct economic growth and increased employment. To date, Agripreneurs have prepared 41 detailed business plans seeking \$3.79 million (or \$92,400 per business) and lines of credit are being secured. Agripreneurs also train other youth at IITA project and community liaison levels, with 2,002 trainees over the past few years, and 16,350 planned over the next. Two major AfDB Programs, ENABLE Youth and ENABLE TAAT will greatly increase the reach of IYA over the next several years. In response to this challenge, IYA operations in Ibadan are being reorganized around service provision to Agripreneur groups elsewhere and the unit has become integrated into the P4D Directorate. Innovations are also appearing at the agribusiness incubation level as well, and illustrative examples are presented for four Agripreneur groups in three countries. A key emergent opportunity is where youth are out-posted to abandoned or failing agricultural facilities and are able to rehabilitate them within a few weeks. IYA offers a focused vision for youth in agribusiness by providing leadership and services to Agripreneurs across Africa, developing collaborative programs that advance youth agribusiness skills, and improving both agribusiness opportunities and the creditworthiness of youth. It follows both short- and longer-term strategies toward these ends. Empowering African youth toward self-employment through agribusiness and assisting them to grow their businesses is a huge but necessary challenge and IYA has made substantial progress toward this end. Six recommendations are offered that advance the Agripreneur Movement in the near-term.

Background

The IITA Agripreneur initiative is a youth agribusiness model established to address the issue of widespread youth unemployment and to provide a platform that propels youth toward self-employment in agriculture. The issue of unemployment among youth across Africa results from many years of "jobless growth" and is linked to civil unrest and a host of social ills (AGRA 2015; Kristensen, and Birch-Thomsen 2013; White 2015). IITA set into motion a mechanism to explore opportunities for youth through participation in agribusiness incubation, in part built upon its proven technologies (Woomer et al. 2015). The initial effort conducted at IITA HQ between 2012 and 2014 was relatively small and slow, leading 40 youth to develop five pilot enterprises (IITA 2012), but the means to magnify and accelerate this progress was learned for application elsewhere in the process. Furthermore, these

youth started to partner with donors and the public and private sectors, opening greater opportunities to themselves and others (MasterCard Foundation 2015). The Agripreneur Movement quickly expanded to 13 groups with 385 members operating 36 learning-by-doing enterprises in six countries (Table 1). This timely, high-profile success led the African Development Bank to include the Agripreneur Model into its much larger ENABLE Youth Program that provides loans to Regional Member Countries intent on empowering youth through agriculture (IITA 2015).

The larger issue before IITA now is how to translate the Agripreneur's initial successes and lessons learned into an array of empowerment opportunities for youth that in turn build upon IITA's strengths as a research institution (Owoeye et al. 2016). A recent paper Ripoll et al. (2017) challenged the research elements within IITA's Agripreneur program, even cautioning against "formulaic" youth mainstreaming within research centers as a threat to "intellectual agendas". This paper focused upon theoretical frameworks for "young people's engagements" and opportunity "pathways". It presents models but makes no effort to validate them with data from actually working with youth. Admittedly some of these criticisms are valid. The Agripreneur Movement is not based upon hypothesis testing, but rather iterative problem solving. University graduates are provided means to identify and achieve their livelihood goals, and IITA does not act as an impartial observer, but rather applies its expertise to issues that arise, and steers the process away from some anticipated less successful outcomes. We greatly prefer our approach of real world engagement. To date the Agripreneurs have not been particularly effective at conducting M&E. Despite spending much time examining tools and indicators, the group was slow to develop useful databases that document their successes other than through isolated case studies. This situation may largely be attributable to their not holding advanced degrees, this report attempts to reverse this shortcoming by focusing upon quantitative parameters achieved by the Agripreneur Movement.



A group photograph of IYA Core Staff at their headquarters in Ibadan, Nigeria.

Table 1. IITA Agripreneur groups, their current membership and main agribusiness enterprises.

Agripreneur Group (Country)	Members	Agribusiness enterprises
IYA Ibadan (Nigeria)	70	Seed, crop, vegetable and fish production; fish hatchery; value added snack products, poultry, contract farming; training and service provision. Works closely with IITA BIP and has established satellite groups in Imo, Kano and Onne, Nigeria
Abuja Agripreneurs (Nigeria)	35	Seed, crop and vegetable production; fish farming and processing
Borno Agripreneurs (Nigeria)	130	A youth network approach supported through the N2Africa Project. Grain trading; groundnut processing; and training services
ITYA (Dar-es-Salam, Tanzania)	18	Crop production and soymilk manufacture
IKYA (DR Congo, Kalambo)	27	Crops; vegetable and fish production; fish feed manufacture; bakery and training services
Kisangani Agripreneurs (DR Congo)	35	Cassava production and processing
Kinshasa Agripreneurs (DR Congo)	30	Mushroom production; bakery and value-added snacks.
Kibwezi Hortipreneurs (Kenya)	10	Greenhouse vegetable production; fish farming and feed manufacture; sweet potato crisp manufacture and marketing; grain trading and training services.
UYA (Uganda)	15	Vegetable production and web-based marketing
ZIYA (Zambia)	15	Maize and vegetable production
Total of the ten groups	385	36 enterprises and services in six countries

Agripreneur Characteristics

A quantitative description of Agripreneur members was performed (Table 2). It is based upon the responses of 301 Agripreneurs belonging to fourteen groups in DR Congo, Kenya, Nigeria, Tanzania, Uganda and Zambia. It relies upon four key indicators: women participation, roles within the groups, educational background and aspirations. Women constitute 48% of membership. To a small extent, the roles within the groups appear "top heavy" and some members appear not fully committed to agribusiness skill development. Nineteen percent (19%) regard their role as administrative rather than primarily committed to the development of agribusiness skills. As expected, the Agripreneurs are derived from a wide range of backgrounds and disciplines, but large differences exist between individual groups (data not presented). Sixty-six percent (66%) of the Agripreneurs surveyed are pursuing the expected entrepreneurial track, but many others seek employment as business and marketing managers following their internship (10%). Another 15% regard their internships as a means toward working in rural development as project managers and trainers. Some others remain uncertain of their goals and likely require stronger mentorship. Overall the Agripreneur Movement appears on-track and the priority must now be to assist in the agribusiness ambitions of a majority of its members. Within the Agripreneur database there is a wealth of additional information but some parts of the database contain vacant cells, and a strategy for completing it is under development.

Training of and by the Agripreneurs

Training of youth in agribusiness skills operates at two levels where the individual Agripreneurs themselves develop a complete skill set through their participation within multi-tasked agribusiness incubation, and where the IYA leadership and the Agripreneur groups also participate in the training of others. Agripreneur training was described in Table 1 where 385 youth interns participate in 36 different learning enterprises in 10 locations and six countries. This

Table 2. Characteristics of 301 Agripreneurs belonging to fourteen groups in six countries (based on the IYA Agripreneur Database).

Indicator	Category	<i>f</i>
Gender	Women participation	0.48
Roles	Leadership position	0.06
	Administrative position	0.09
	Training, Communication and M&E	0.15
	Agribusiness skill development	0.70
Background	Agricultural	0.41
	Business	0.20
	Other Sciences	0.23
	Social Science & Arts	0.13
	Law	0.03
Goal	Entrepreneurial Track	0.66

effort represents mainstream training that leads to the establishment of independent agribusiness. To date, 134 such businesses were started and IYA has started to track their success. Most of these businesses are small enterprises providing inputs and services to other farmers, but some are medium scale farming and food processing businesses.



An Agripreneur conducting training on plantain sucker multiplication



Classroom training for the beneficiaries of the N2Africa, Borno Project in Kano, Nigeria

The second route of training is where Agripreneurs either conduct localized youth liaison, or where IYA become partners in youth training initiatives organized by others (Table 3). Reports on this training pathway were collected from four countries; Nigeria, DR Congo, Kenya and Tanzania and total 2002 youth. In Nigeria, emphasis is placed upon geographical balance with youth trained across five of its geo-political zones. The figure 800 for Nigeria is not an estimate, rather 34, 160, 59, 222 and 325 youth were trained between 2013 and 2017, respectively, mostly in the value chains of IITA's mandate crops and the BIP's core enterprises. In DR Congo, the Youth Agripreneurs in Kalambo and Kinshasa are called upon to assist training rural communities mobilized through other IITA projects. The Kibwezi Hortipreneurs in Kenya operate within the University of Nairobi Dryland Research Station, that also hosts university students and Makueni Added Value Incubation Center, and the group is called upon in their training. The group also hosts interns from the County Government and other projects. Training in Tanzania focused upon value addition of grain legumes promoted through the N2Africa project and was mostly focused upon women starting small-scale processing enterprises. IYA will pay greater attention to monitoring this second pathway to youth training and its impacts, including those in other countries. We must be careful not to "double report" these successes as they are often embedded within other IITA projects.

Training by Agripreneurs will become more formalized starting in 2018 through its participation in the MasterCard and SIANI Agripreneurship Alliance projects. The MasterCard Project is conducted in conjunction with the Michigan State University Youth Lab and will provide training to 16,250 youths in Nigeria and Tanzania over four years, mostly through IYA-assisted short courses. The SIANI Project will establish a modular course for 100 students at five African universities that results in students completing a business

plan to a professional standard. These trainees do not include the massive numbers of youth (about 50,000) mobilized through the AfDB ENABLE Youth Projects in in Cameroon, Cote D’Ivoire, DR Congo, Kenya, Madagascar, Nigeria, Senegal and Sudan that are presently being formulated. Opportunity exists to extend training to high school students within vocational agriculture programs as well. For example, IKYA is assisting New Day Africa to provide agricultural and agribusiness training to students of eleven secondary schools in South Kivu, DR Congo, reaching over 1800 youth over the past three years (not included in Table 3).

Agribusiness Development Outcomes

The mechanism toward agribusiness development by agripreneur youth is through the development of detailed business plans intended for investment and commercial loans. Several mentors assist in this effort, particularly EKIMIKS in Nigeria (Woomer et al. 2015a). These plans are built upon six proven business models: seed production, cassava production and processing, fish production, horticulture, advanced propagation systems and value-added processing; but youth are encouraged to explore other enterprise opportunities as well. In Nigeria, 25 agribusiness plans are being finalized that require about \$1.75 million in loans and project \$11.2 million in revenue, an average cost to benefit ratio of 1.5 per model.

These businesses will provide self-employment to about 100 departing Nigerian Agripreneurs. Four of these businesses were launched in June 2017 related to poultry raising, snack production, fish processing and cowpea & yam packaging. Similar efforts are underway in Kenya where eight

business plans involving 11 youth seeking \$340,000 are under development (Woomer and Mulindi 2016). In DRC, eight agribusiness plans are being finalized that require about \$1.7 million in loans and projects \$7.8 million in revenue, an average cost to benefit ratio of 2.3 per model. Fish cages, poultry and mushroom production has been launched in April 2017 and additional business plan development is ongoing. IYA maintains a database that tracks these and other Agripreneur business plans. To some extent, the establishment of youth-led businesses was delayed by reliance upon loan mechanisms from the ENABLE Youth country projects that have been slow to materialize. Opportunities for access to alternative commercial credit and investors are now being sought elsewhere.

Table 3. Additional youth trained by IYA and individual Agripreneur groups in four countries over the past few years.

Country	Trainees to date	Comments
Nigeria	800	Across all Nigeria, 41% women, mostly in IITA mandate crops
DR Congo	1051	Closely linked to other IITA projects during 2016 and 2017
Kenya	97	In conjunction with the University of Nairobi and Ministry of Agriculture
Tanzania	55	In conjunction with the N2Africa Project legume value addition activity, 80% women
Total	2002	

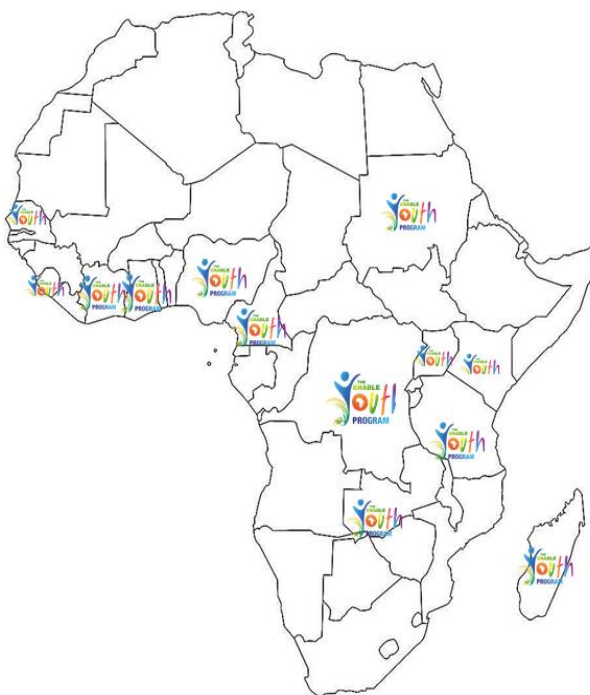
ENABLE Youth TAAT

ENABLE Youth TAAT represents a huge opportunity to the IITA Youth Agripreneurs (IYA). Its inclusion into the larger TAAT Program indicates that the African Development Bank (AfDB) views youth as an essential component of African agricultural transformation. The TAAT Tier 1 allocation to IYA is substantial, \$3.2 million over three years, with a promise of similar resources during later Tiers. Like other areas of TAAT, it is focusing during Year 1 on "quick wins" where resources are directed to efforts that lead to measurable impacts upon the nine priority value chains. IYA proposes a strategy where these quick wins will first be built upon ongoing Agripreneur activities in five countries; DR Congo, Kenya, Nigeria, Tanzania and Zambia. A mechanism is under development that allows for these opportunities to be identified, supported and assessed. The stated target of ENABLE Youth TAAT Tier 1 is to engage at least 750 youth in 24 or more learning enterprises that leads to the establishment about 500 new businesses by 2021.

Two particularly strong approaches for these "quick wins" are available. Recently, IYA agribusiness incubations have led to the emergence of several profitable enterprises but these are slow to achieve the status as independent, youth-led businesses. This delay is largely due to the slower than expected emergence of credit mechanisms in support of youth, including in ENABLE Youth country programs. At the same time, IYA partners

across Africa express eagerness to provide lands and facilities that support youth enterprise. Youth Agribusiness Parks allow several Agripreneurs to grow their independent businesses as tenants while at the same time working together to provide common, mutually services, such as land preparation, water delivery, product transport and marketing. Facilities for such parks are appearing in Abuja and Imo (Nigeria), Bukanga Lonzo and Kalambo (DRC) and Kibwezi (Kenya).

Another opportunity appears when abandoned and underutilized agribusiness facilities are identified, reoccupied and rehabilitated by small groups of Agripreneurs. Several of such facilities are under redevelopment including abandoned farms, derelict greenhouses, poorly managed fish ponds and insolvent poultry businesses. In some cases, such facilities are



Planned Actions by ENABLE Youth TAAT in Tier 1



Some selected IYA members across Africa during a visit to AfDB headquarters in Abidjan

difficult to discover because of their embarrassing past failure and deteriorating condition, but once accessed they are quickly appraised, cleaned, business strategies formulated and returned to production. IITA expertise is crucial to this successful transition. Such facilities were discovered in DRC, Kenya and Nigeria, and more will doubtless emerge. In some cases, the facilities are clustered; as when greenhouses, fish ponds and poultry pens are found in the same general areas, and their operations assigned to different groups of youth opting to specialize in their respective agribusinesses. Rehabilitation may achieve an additional dynamic as when 1) new facilities are constructed next to rehabilitated ones, 2) youth depart to begin their own similar businesses elsewhere, and 3) additional under-performing facilities are offered to youth, either as groups or individuals, based upon growing awareness of their success elsewhere. Under the best of situations these rehabilitated facilities can transition into youth agribusiness parks described above.

A third benefit from youth participation is expected across TAAT where CGIAR value chain leaders other than IITA begin to work with Agripreneurs to their mutual benefit. These centers include Africa Rice, AVRDC (vegetables), CIAT (beans and climate-smart interventions), ILRI (animal enterprise), World Fish (aquaculture), and in some cases ICARDA (wheat). Some partner centers have already allocated budgets toward youth activities but in some cases view them more as assisting in field technology campaigns rather than operating Agripreneurs accustomed agribusiness incubations. This joint participation is likely to expand the scope of youth empowerment and Agripreneur operations in the future.

AfDB ENABLE Youth Program

The AfDB ENABLE Youth Program is essentially meant to build upon youth empowerment opportunities pioneered by the IITA Agripreneurs but to do so within the context of country loans and leadership by national partners. While this effort has led to some awards to RMCs, the country projects themselves are slow to materialize. This is the case for Cameroon, DR Congo and Nigeria where funds are available but no youth activities have started. In some cases, national partners have rejected the Agripreneur model but have not replaced it with an alternative approach. In others, details on credit guarantee mechanisms are slow to become identified, particularly who shall hold loan funds and decide upon their

approval mechanisms. The latter delay is ironic because this refinement should run concurrently with group start-up and early operations. In some cases, countries appear reluctant to provide IITA with funds from their loan applications despite our key role in formulating projects and standing offers for technical assistance, training tools and communication services. A case-by-case summary of ENABLE Youth country programs follows, and the role of IITA within them.

1. **ENABLE Youth Nigeria** is a large program (\$350 million) that intends to operate in all 37 states and through widespread public-private partnership. The country program was approved by AfDB at the end of 2016 but the government has yet to put it into effect, largely because its loaning partner is not determined. IITA will play a central role in training when the program is finally launched. IITA developed a suite of training materials intended for this project.
2. **ENABLE Youth DR Congo** (PEJAB, *Projet pour l'Entrepreneuriat des Jeunes dans l'Agri-Business*) will operate in eight provinces in conjunction with a network of new agribusiness parks. The project (\$57 million) is an AfDB loan approved in December 2016. IITA is preparing a competitive bid to implement the project along with IFPRI and INERA. The project is awaiting parliamentary ratification of the AfDB loan which is expected in October 2017.
3. **ENABLE Youth Cameroon** was approved as a component of a larger loan from AfDB in 2016 but is yet to start (\$16 million). IITA was central in developing the project's Concept Note but the managing agency prefers to offer IITA a series of specific contracts that are not yet formulated. IITA translated its training materials into French in anticipation of the project.
4. **ENABLE Youth Sudan** is establishing nine agribusiness incubations that follow the Agripreneur model (\$24 million). It operates as an AfDB grant rather than a loan, mostly using unspent funds for other sources. IITA placed a coordinator with the project and provided a range of training and communication tools.
5. **ENABLE Youth Kenya** is in an advanced stage of preparation (\$24 million). It will operate in eight counties and focuses upon existing registered grassroots youth groups rather than Agripreneur start up in a way that does not reflect full understanding of how ENABLE is intended. AfDB Officers are in discussion with Kenyan partners on these issues.
6. **Other ENABLE Youth country projects** are under formulation in Cote d'Ivoire, Ghana, Kenya, Madagascar, Mali, Senegal, Sierra Leone and other countries.

IYA is well positioned to assist in the operations of ENABLE Youth projects across Africa, particularly through the use of its communication, M&E and training tools. But the issues that delay the final formulation and launch of these projects appear larger than IYA itself and must rather be handled by AfDB and IITA senior leadership.

New Directions for Agripreneurs

The IYA Reorganization. Agripreneur operations at IITA HQ are being reorganized so that they support Agripreneur incubations elsewhere rather than conduct their own. The Agripreneur Movement which started in Ibadan, led to the development of several profitable pilot enterprises and identified which youth were best suited for leadership positions elsewhere as its opportunities expanded. Now IYA is reorganizing itself, offering advocacy, fund raising, communication and capacity development services. This necessarily requires repositioning of several rank-and-file Agripreneurs. The horticulture, fish farming, seed production and snack processing operations were handed over to the IITA Business Incubation Platform along with the skilled youth to operate them. Other youth were out-posted to enterprises and new groups initiated elsewhere. Stipends for these youth will end in December 2017 as it is understood that these relocated youth are expected to conduct enterprises on a cost-recovery basis, and that many are expected to become privatized over the next several months.

One strength of the reorganized IYA is its ability at fund raising. The Agripreneur Movement is high-profile, and with this recognition has come grant opportunities from non-traditional donors (those outside IITA's research partners). Contributions from these developmental partners include the MasterCard Foundation (\$189 k per year), Chevron Nigeria Limited (\$600 k per project) and the award-winning Hello Tractor network (\$148 k per project). These projects support 10 youth as IYA staff as well as field activities. Discussions are also ongoing with additional investors including the Islamic Development Bank, Sahara Foundation, GroFin, AfDB Boost and Nestle. To reinforce these opportunities, IYA has developed a Corporate Social Responsibility policy that describes the benefits to others that link their image and efforts to the Agripreneur Movement (IITA Youth Agripreneurs 2017).

IYA services include both a Communication Unit and a Capacity Development Unit. The Communication Unit produces and distributes information materials that reflects the Agripreneur strategy, activities, and outcomes and showcases agribusiness opportunities available to youth across Africa. It relies primarily upon social and electronic media including the www.youthagripreneur.org website (monthly updates), Facebook (over 10,000 friends) and Twitter (5384 subscribers). Other communication products include a range of printed materials, video documentaries (four to date available over YouTube) and branded Agripreneur calendars, shirts and hats. The Capacity Development Unit develops training materials and conducts training courses preparing youth to start and manage agribusinesses. To date six training manuals are available in English and three of these translated into French. These training materials not only reinforce the expansion of the Agripreneur Movement but also attract other parties interested in youth empowerment including USAID (under the Hello Tractor project), Chevron Nig. Ltd. Ekimiks Nig. Ltd., Michigan State University's Youth Lab and the MasterCard Foundation. To date over 800 youth were trained in Nigeria alone. The Communication, Capacity Development and Monitoring & Evaluation Units will remain an important element within the reorganized IYA, but with greater attention paid to cost recovery from projects and partners they assist.

KHYG, Kibwezi, Kenya. One of the smallest Agripreneur groups, the Kibwezi Hortipreneur Youth Group (KHYG), is also one of its most successful and independent. Its activities in Kenya started in early-2015 under the IFAD-YADI 2 Project. The group conducts irrigated vegetable farming in semi-arid east Kenya at the University of Nairobi Dryland Research Station where a greenhouse facility was previously abandoned for many years. At that time, all other Agripreneur groups were located within IITA facilities, with close access to technical advice and near large markets. KHYG served as a critical first test to demonstrate that the Agripreneur approach also works in more remote and less developed settings. KHYG operates 216 km from Nairobi and down a 15 km unpaved road. It has poor mobile phone coverage and no internet. On the other hand, the site sits along the spring-fed Kibwezi River, has a fertile sandy-loam soil and a favorable climate of warm days and mild nights, perfect for vegetable production.

Table 4 KHYG. monthly balance (US \$ from April-August 2017).

KHYG balance	US \$ per month
Group costs	
enterprise	1098
outreach	882
coordination	293
<i>Total costs</i>	<i>\$2273</i>
Group revenue	
production	625
marketing	539
services	208
<i>Total revenues</i>	<i>\$1372</i>

A launching ceremony was conducted at IITA-Kenya to announce the start of the Agripreneur Movement in Kenya and afterward a founding group of 12 youth repaired the abandoned greenhouse facility and prepared it for planting. HortiCenter Kenya Ltd., a business that specializes in greenhouse and irrigation supply, provided materials and supervisory expertise. A first crop of cucumbers was planted and the group was fully engaged in vegetable production in less than one month after the launch. Indeed, agribusiness incubation was more accelerated by KHYG than most other groups because the immediate access to greenhouse facilities proscribed a "low hanging" enterprise opportunity, a strategy that was soon replicated elsewhere in DR Congo and Nigeria. With the greenhouses it renovated, along with another it built, the group currently operates 2700 m² of drip-irrigated greenhouse beds. Seedling availability, tomato-cucumber rotation and wholesale marketing are keys to success. Recently the group harvested 5.7 tons of cucumbers from only 700 m² of greenhouse (= 80 tons per ha) in only three months and marketed them in 90 kg bags to a leading Nairobi buyer (earning about \$1 per m² per month). Other enterprises are conducted including fish and leafy vegetable production, crisps processing and seasonal grain trading.

Table 5. Outcomes from KHYG membership over 30 months

Member outcome	proportion
Continue group enterprise	0.44
Started own farm/business	0.25
Found employment	0.13
Continue education	0.06
Dropped out	0.12
<i>Of 16 members</i>	<i>1.00</i>

Both economic trends of the group (Table 4) and outcomes from its members (Table 5) are positive. While the group is not self-sufficient, it covers its enterprise costs, resulting in an average monthly profit of 12% and modest savings in the group bank account (\$2300). Other costs are related to community outreach/training, part of their larger Agripreneur



KHYG sorting harvested tomatoes from the greenhouse for sale

Movement mission, and coordination by IITA. Membership outcomes are also positive. Of the 16 members joining the group, seven continue to operate its enterprises, four have started farms or businesses, two found employment, one was recently awarded an M.Sc. scholarship and two members departed. One departed to be married, and another through disciplinary action. KHYG intends to position its ventures into a Youth Agribusiness Park and to recruit a new batch of interns soon (Woomer and Mulindi 2016). Clearly the KHYG agribusiness incubation is on solid footing and serves as a useful model for the multitude of similar groups expected to follow within the ENABLE Program. It has rapid turnover of members; some of its members have left to start their own agribusinesses, and others have found employment not possible without experiences gained. It operates through mentorship, mostly by IITA scientists and private sector product representatives. The group also hosts delegations from schools, other farms and interns from other development projects and is now transitioning into profitable agribusinesses owned by its members.

Borno Youth, Borno State, Nigeria: This Agripreneur effort in north-eastern Nigeria results from partnership between IYA, the N2Africa Project and the Bill & Melinda Gates Foundation. Its agribusiness incubations were focused upon three grain legumes (cowpea, groundnut and soybean) and their related entrepreneurial opportunities. This group started in 2014 with 20 youth. The training cycles are short, and to date 127 youths (28% female) have received agribusiness "re-orientation" and an "enterprise starter pack".

The resulting enterprises are arranged into three duly-registered cooperative business groups located in different parts of the state. These youth-led businesses have not only resulted in self-employment but also 837 additional "downstream" jobs.

These agribusinesses include farm input supply, grain legume trading and processing, and providing pest control services. Trading alone accounted for 155 tons of produce in 2016. These youth have attracted the attention to an Anchor Borrowers Program to further grow their businesses. Business start-up, profits and assets by these youth-led enterprises has reached about \$510,000. Profitability of these



Borno Youth Agripreneurs at a sales point for their produce

ventures is about 40%. Traders are moving beyond grain legumes and into cereals, livestock, fish and other foodstuffs. The cooperatives operate online trading platforms and they now trade with neighbouring states. The success of these Borno Youth has led IYA to reconsider the scope of training and follow-up activities offered to under-employed youth in outlying area, suggesting that shorter duration training in specialized enterprises, followed by modest support for business start-up and institutional business support can result in solid economic returns. This success becomes particularly important in light of the terrorist threats in that part of Nigeria, making it important that youth see agribusiness as a pathway to achieving their livelihood ambitions.

IKYA, Kalambo, DR Congo. The IITA Kalambo Youth Agripreneurs (IKYA) was the first agribusiness incubation launched in DR Congo (2013) and operates from the IITA Station near Bukavu in eastern Congo. The group has initiated several pilot ventures including vegetable and fish production, a bakery and cassava production and processing. Cassava is particularly important in DR Congo as it is the second largest producer in Africa but its processing methods remain largely artisanal and rudimentary.

In response, IKYA installed a modern cassava processing unit based upon IITA technologies that produces High Quality Cassava Flour. Since January 2017, IKYA has processed an average 16 tons of cassava per month, generating total revenue of \$14130. Preliminary financial analysis suggests that one ton of cassava flour is produced for \$450 and sold for \$1000. This activity is conducted in conjunction with Community-based Cassava Processing Centers established through other IITA projects where IKYA serves as a trainer and marketer of flour as well. Two factors limit the group's flour production; the supply of fresh cassava from out-growers, and the rate of drying through an open-air system. To increase the supply of cassava, IKYA has linked with 14 youth groups engaged in cassava production and installed locally made solar dryer at each CCPCs. Drying will be accelerated through purchase of a flash drier.

Opportunities are opening in other areas as well. The Catholic Diocese offers the group 24 ha for extending its vegetable and cassava production. Two large abandoned fish pond networks were discovered at Myakabere and Lwiro and are being converted to modern production of catfish. To reduce costs the group produces its own feed from locally-sourced ingredients. IKYA



IKYA team producing High Quality Cassava Flour

operates a commercial bakery in Bukavu town where cassava- and protein-enriched breads are produced. Indeed, IKYA has achieved the first part of its youth empowerment task, to develop profitable agribusiness models and the skills needed to operate them, and now must focus on how to best privatize and replicate them. This challenge will be addressed through collaboration with the upcoming ENABLE Youth DR Congo project.

Imo Agripreneurs, Imo State, Nigeria. During early 2017 IITA was confronted with a first of a kind challenge by authorities in Imo State, Nigeria. Plans for agricultural diversification were progressing too slowly and IITA was asked how could its high-profile Agripreneur program assist in demonstrating the viability of horticulture, fish and poultry enterprises. Under-utilized facilities were available at Imo Polytechnic and the Niger River Basin Development Authority, a rapid appraisal was conducted by IITA staff and IYA youth, preliminary agreements were reached, and six experienced Agripreneurs were dispatched to renovate and restore a 5000 m² greenhouse, five large poultry houses and 17 drained fish ponds. Backstopping these efforts were staff from the IITA Farm Management Offices at Ibadan and Onne. Once the scope of the tasks was understood, 10 more youth were dispatched to assist.

The greenhouse at Agbala was completed a few years earlier but never put into production. Within three weeks of arrival in Imo, 5600 seedlings of 17 promising vegetable varieties were started, the drip irrigation system redesigned and installed, 5000 m of planting beds raised and fertilized, and 10 different exploratory horticultural approaches established to determine which crops and varieties perform best and have the strongest markets. Within three months there were clear winners and losers, and successful production and marketing of cucumbers, tomatoes, capsicum and pepper were underway. These youths arranged themselves so that their responsibilities rotated, allowing for all members to develop a balanced suite of horticultural skills. Early successes were tempered by the onset of pests and disease, but these too were addressed through mentorship and good agricultural practice, and now vegetable production operates at a 24% level of return (Table 6).

The dormant poultry facility at Imo Polytechnic seemed almost too good to be true. It consisted of broiler pens and layer cages that only required a thorough

Table 6. Cost and revenue from five Agripreneur enterprises in Imo

Enterprise	Production unit	Cost (\$)	Revenue (\$)
Cucumber production	per 500 m ² bed	371	515
Tomato production	per 500 m ² bed	490	557
Poultry: broilers	per 100 birds per cycle	420	504
Poultry: layers	per 100 cages per week	840	1020
Catfish farming	per one m ³ per cycle	130	196

cleaning and replacement of termite damage. A heated nursery area was established, water and feed dispensers installed, and 2300 kg of feed and 700 day old chicks consisting of 350 broilers and 350 pullets (young layers) purchased. Within two months 338 broilers were harvested and sold, and within four months an average of 250 eggs were marketed daily. Next another 2500 additional layers were added to the flock and currently 720 eggs are harvested daily. These youth paid close attention to their costs and returns, and also established an intern program where other youth learn poultry production as well. After a few months of operations, poultry diseases appeared but this was overcome through quarantine, improved sanitation, and veterinary medicines, all valuable lessons learned. Profit levels are relatively low (20%) owing to the high cost of poultry feed, but the high value of poultry products results in favorable cash flow. Fish farming was more difficult to establish because of the leaky ponds, unreliable water delivery and the slow initial growth, but fish harvests are started and the enterprise appears profitable (51%).

The successful effort by Agripreneurs in Imo has shown that empowered youth can succeed at agricultural enterprises where others have failed. By assuming control of and rehabilitating abandoned facilities, start-up costs are minimized. Much of Imo State is urban so market demand is high but consumers have rather exact preferences, rejecting some



Imo Agripreneur with crates of tomatoes from the greenhouse (left) and another tending to layers in the poultry house (right)

vegetables but paying higher than expected prices for others. While the Imo Agripreneurs have met their first challenge, restoring profitable production to Imo, the larger benefits from wider successful, independent agribusiness startup by youth across Southeastern Nigeria requires further planning and additional support.

Plans for Institutionalizing Expertise beyond IITA's Mandate

The Agripreneurs were initially intended to focus upon agribusiness opportunities emanating from IITA's mandate crops, and this was achieved with impressive results along entire value chains. These include banana, cassava, cowpea, maize and soybean, and their value-added processing. At the same time, other interests emerged, particularly rice seed production, fish and poultry raising, and vegetable horticulture. To gain expertise in these areas, the Agripreneurs network was required to leverage on external partnerships. IITA works closely with Africa Rice and both new varieties and management skills were obtained from its staff working in Ibadan. Expertise and technologies related to aquaculture and poultry was accessed through the private sector including Durante. In addition, World Fish advised on aquaculture development in DR Congo. For the most part, poultry chicks and supplies are available where the Agripreneurs maneuver, and if not this provides an entry point for agribusiness expansion. Vegetable horticulture operates at very different levels in countries across the Agripreneur Movement. In Kenya where horticulture operates at an advanced stage, several private companies provide mentorship in the design and operations of commercial greenhouses. This expertise was then conveyed to other groups by an IITA Technical Adviser, including best varieties, seedling operations, and irrigation and trellising systems. Two other factors assist in institutionalizing agribusiness incubations outside of IITA's crop mandates. One is that the Business Incubation Platform of IITA has assimilated several of the pioneering enterprises developed by the Agripreneurs in and around Ibadan and continues to operate them both as self-sufficient business and learning facilities. Also, the planned TAAT Project includes several CG partners that will work directly with the Agripreneurs to bring their respective technologies to youth throughout Africa. Through these mechanisms the skills and technologies required for agribusiness development beyond IITA's immediate mandate areas are readily acquired. A necessary next step is for IYA to develop a contact database of mentors so that these advantages are more readily available to agribusiness incubations as they start and grow, and to develop guidelines on how best to manage mentorship engagement.

Short- and Longer-term Goals

IYA has a focused vision for youth in agribusiness and sees its progress in terms of both short-term strategy and longer-term targets (Table 7). We envisage IYA as providing leadership and services to Agripreneurs across Africa, developing collaborative programs that advance youth agribusiness skills, and improving both agribusiness opportunities and the creditworthiness of youth. Better realizing these goals starts with reforms within IYA as a multi-tasking service provider to Agripreneur groups across Africa. These services include advocacy, fund raising, communications and training. No longer will agribusiness incubations be based within the Ibadan HQ, rather pilot enterprises will be positioned elsewhere with technical and logistical backstopping.

Expertise in youth empowerment is no longer outside of the expertise of IITA, rather the high-profile successes of the Agripreneur Movement has elevated the institute into

Table 7. Short- and longer-term strategies toward youth empowerment by IITA.

Youth empowerment goal	Short-term strategy	Longer-term target
Provide leadership and services to Agripreneurs across Africa	Reform IYA operations at Ibadan to provide services to Agripreneur efforts elsewhere	Establish Youth in Agribusiness as a permanent element within P4D working across Africa
Develop collaborative programs advancing youth	IYA develops projects and partnerships that improve youth-led opportunities	AfDB ENABLE Youth Program provides loans to member countries toward national youth agribusiness programs
Provide experiential learning in agribusiness skill	Agribusiness incubations established in additional locations and countries	Universities incorporate agribusiness incubation approaches into undergraduate programs
Improve creditworthiness of youth-led agribusiness	Assist in development of winning agribusiness plans	Commercial lenders establish youth business programs
Strengthen agribusiness opportunities	IITA directs youth toward agribusiness opportunity "soft spots"	Public and private sectors establish Youth Agribusiness Parks

leadership in this area. The Youth in Agribusiness Office will become a permanent element within P4D Directorate working across Africa and in close collaboration with major development interests. AfDB ENABLE Youth Program is off to a slow start but ultimately it will provides loans to member countries toward developing national youth agribusiness programs, and will do so in partnership with IITA. Many of the principles pioneered by the Agripreneurs will become incorporated into the curricula of universities and vocational schools. The positive examples set by young entrepreneurs will prompt commercial lenders to establish youth business programs and the public and private sectors establish Youth Agribusiness Parks. Agribusinesses intended to provide self-employment for their founders will grow and provide decent jobs within a transforming agricultural sector.

Conclusions and Recommendations

Empowering African youth toward self-employment through agribusiness and assisting them to grow their businesses is a huge but necessary challenge before African Agricultural Transformation. IITA and its Agripreneur Movement have made progress toward this end, as evidenced by the rapid growth of the movement itself, and buy-ins by other partners. While others have theorized and held conferences about the dilemma of marginalized youth, or focused upon a few isolated success stories; IITA is organizing, motivating and training large numbers of youth within innovative agribusiness settings and intends to continue this effort into the future.

But it is not only Agripreneurs youth who are learning-by-doing, but so too is IITA. Its target of working with under-employed university graduates appears to be a useful entry point because these youth have the baseline skills needed to start and grow a business, but it appears that not all youth joining an agribusiness incubation are genuinely interested in this outcome. Some, perhaps too many, see engagement as Agripreneur interns as a stepping stone to other professional ambitions. IITA must determine the extent that is poses a

liability to its efforts and if so, how to better screen and accelerate the departure of these youth in the future.

Another shortcoming is the absence of business loans being directed toward experienced, departing Agripreneurs. This is largely the result of IITA expecting others to organize and provide these financial services, or at least that the Agripreneurs themselves would attract them. For the most part this has not happened and instead IITA as formulated a series of "bridging" actions where youth conduct ventures under its supervision and subsidy. Should this be corrected and if so how? Should a transition period be established where departing youth achieve self-sufficient business operations, and then spin off into the private sector? And if so, what is a reasonable timeline for this approach? And while these issues appear weighty, they are but another stage in the iterative problem solving approaches that IITA faces through learning from and ensuring success of its Agripreneur Movement. We offer a few recommendations that forward the Agripreneur Movement in the near-term.

1. The transition toward service provision by IYA at Ibadan must continue, and result in a lean, effective team of experienced youth offering valuable services to other youth groups across Africa. But many of the Agripreneurs that have failed to develop agribusiness plans in a timely manner, but instead gravitate indefinitely around these services should be either be offered formal positions or issued internship deadlines.
2. Out-posting youth from IITA-led agribusiness incubations to others' facilities is a useful means of placement. Mobilizing teams that restore abandoned public facilities or that reinvigorate private farms and factories is particularly effective. A systematic search for such opportunities is warranted. But these groups must not rush into situations without the collaborative guarantees that their access to these facilities, once rehabilitated, will continue for several years.
3. Expecting the youth to effectively monitor and evaluate themselves is expecting too much, both in terms of their inexperience in M&E and their vested interest in favorable self-appraisal. IITA social scientists must work more closely with the Agripreneurs and publish on their findings.
4. A more systematic approach to mentorship must be organized, including the development of a mentor database that allows for different types of mentors to be identified and contacted in different places as needed. Mentorship must be expanded beyond technical to better include financial services expertise.
5. The establishment of Youth Agribusiness Parks is an attractive means to promote their agribusiness. In this case, young entrepreneurs serve as tenants that receive some key common services such as land preparation, water supply and post-harvest facilities. Many concerned parties have offered land and other facilities toward this end but realizing these Parks requires careful planning and additional resources. In some cases, restored facilities (above) may be transitioned into agribusiness parks. Groups must rely less upon IITA farm management and logistic services in developing these Parks as these mechanisms are relatively expensive elements in business start-up.
6. While the AfDB ENABLE Youth Program offers huge opportunity for financial services through its Regional Member Countries, these benefits are slow to materialize and the Agripreneur Movement must source other credit opportunities. Several are identified,

but few have led to investment. These alternative investment and loan mechanisms must be actively pursued, particularly by those who specialize in raising venture capital.

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The IITA Youth Agripreneurs Movement embodies the hopes and ambitions of Africa's youth seeking better lives and livelihoods. Over the past five years, it has seen remarkable progression from mindset change and agribusiness orientation through agribusiness incubation and experiential learning, and now to see the establishment of profitable businesses, service provision and self-employment.



Propelling youth-led agricultural transformation in Africa