



**Raising Skills to World Class Standards
Trade School Technology Transfer**

**GFP International
Leveraged Investments in Human Capital**

www.gfp-intl.org

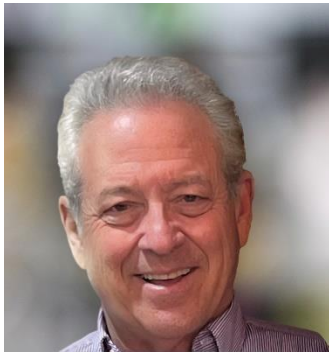
Revised 30 August, 2023

TABLE OF CONTENTS

1. MESSAGE FROM OUR FOUNDER:	1
2. MISSION DRIVEN	3
3. INTRODUCTION TO PHASE 1 PLAN	4
<i>a. Involve National and Local Government Officials and the Private Sector.</i>	<i>4</i>
<i>b. Identify Specific Skills as Early as Possible.</i>	<i>4</i>
<i>c. Foster Coordination Between Training Providers and Owners Project Management.</i>	<i>5</i>
<i>d. Establish Close Integration Between the Training and the Workplace.</i>	<i>5</i>
4. THE PHASES	7
4.1 <i>Gap Analysis</i>	<i>7</i>
4.2 <i>Phase 1 – Train 10 or More Tanzanian Welding Instructors to AWS Certified Standards, Commence Welding School Modernizations</i>	<i>10</i>
4.3 <i>Phase 2 – Train up to 100 welders / trainers in Tanzania, Africa.</i>	<i>11</i>
4.4 <i>Phase 3 – Train up to 1000 welders / trainers.</i>	<i>12</i>
4.5 <i>Phase 4.1 – Train up to 5,000 Welders</i>	<i>12</i>
4.6 <i>Phase 4.2 - Placement of Welders in Jobs</i>	<i>12</i>
5. BENEFITS TO TANZANIA	12
6. BENEFITS TO PROJECT INVESTORS	13
7. COST ESTIMATE FOR PHASE 1	13
8. CONTACTS FOR FURTHER INFORMATION	13

GFP INTERNATIONAL
Raising African trade skills to world class standards –
Leveraged investments in human capital

1. Message from our founder:



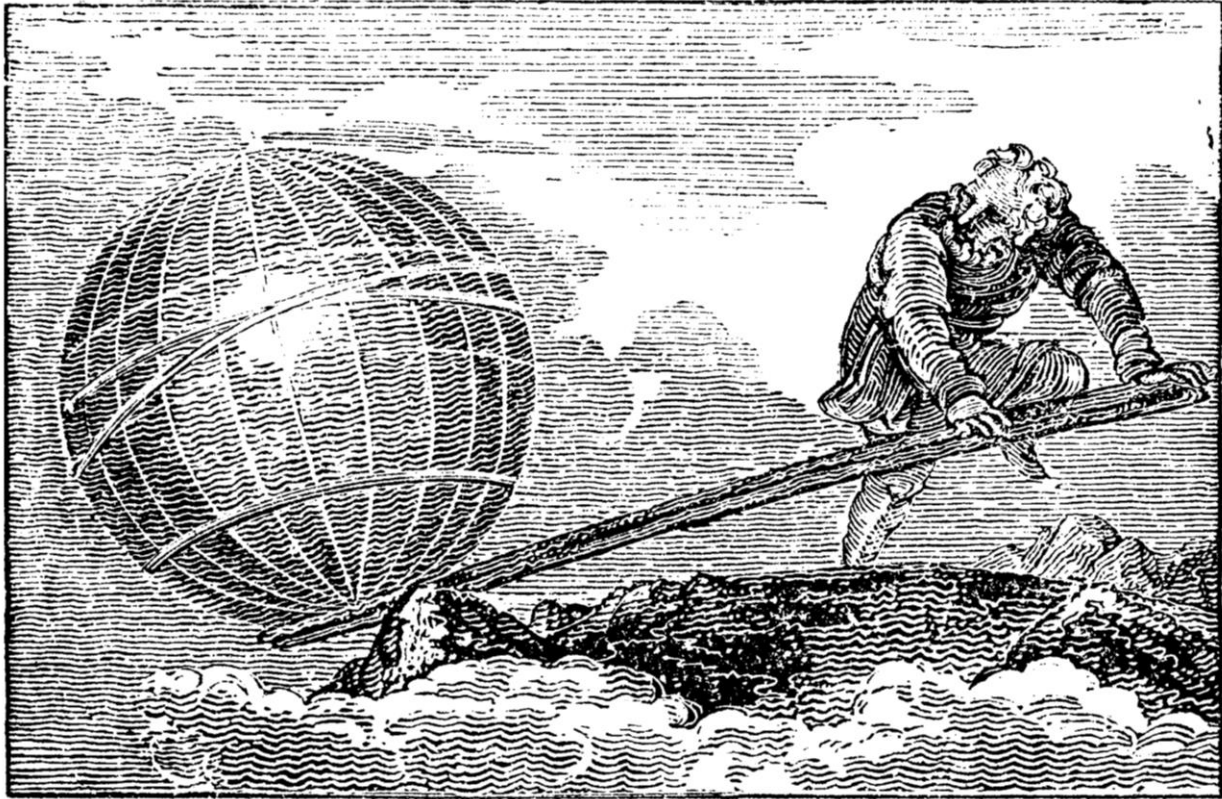
Our mission is to raise the construction and industrial workforce skills in Africa to world class standards. With a history in Africa that dates to 2005, GFP International is partnering with vocational schools, instructors, governments, and industries across Africa to update facilities and modernize industrial training programs for thousands of aspiring individuals wanting to learn a trade with the skills to meet the demands of industrial development. With a focus on certified industrial welding, high voltage electrical, and instrumentation training, our programs will help ensure success for projects in oil and gas, mining, power generation, manufacturing, and infrastructure development over the coming decades.

Outside of South Africa, there are no certified welding schools in the African sub-continent. One of our first strategic goals is to support the modernization and expansion of certified welding schools in Tanzania and Sub-Saharan Africa. Our immediate goal is to work with our partners to produce 5,000 industrial welders who are internationally certified by the year 2027.

Welding skills are a fundamental building block for a modern industrial economy. It is the one skill that cannot be learned as an apprentice. Unlike other skills and trades, learning to become a welder requires hours, days, weeks, and months of dedicated practice while wearing a hood, peering through smoked glass, and working under the helpful eye of a trained instructor. After decades of working in industry across many sectors, and after having completed a gap analysis of the existing welding training in Tanzania, I believe that upgrading the welding training to world class industrial standards will have more leveraged impact than any other human capital investment we will make in the coming years. Both directly and indirectly, the economic development it will support could literally raise millions from poverty and hunger.

To make this point, let me cite the law of Archimedes. Born in 287 BC, he was the most famous mathematician and inventor in ancient Greece who developed the law of

the lever, as depicted in the below image which first appeared in Mechanics Magazine, Knight & Lacey, London, 1824.



In 340 AD, Pappus of Alexandria made a famous quote based on Archimedes law of the lever:

"Give me a place to stand on, and I will move the earth."¹

If you are interested in becoming involved in this unique human capital investment opportunity with a high leverage impact, please review this strategic plan document and our website for more information.

Michael J. Vallez

Michael J. Vallez, P.E.

¹ Pappus of Alexandria in Synagoge, Book VIII, c. AD 340

2. MISSION DRIVEN

1. The School-to-Work Program in Tanzania is driven primarily by our mission to fight poverty through education, training, and job placement. A secondary mission is to support the successful execution of industrial, infrastructure resource projects by public and private owners, and support other sectors including manufacturing and automotive. This program offers the following benefits to project investors and the Tanzanian government:
 - Cost effectiveness. Using skilled workers from in-country is more cost effective than bringing in expats to do the same work. A recent private analysis performed by Johnson Awoyomi, a Nigerian cost consultant, suggested that the overall cost is approximately 40% less than hiring foreign workers.²
 - Tax Revenues for East Africa. The typical pay for a traveling welder in developing countries is \$1,200.00 USD per week, or \$60,000.00 per year. For 5,000 welders, this amounts to a revenue stream of \$300 million USD per year. At a 30% tax rate, this would return \$90 million USD in income tax revenues.
 - A project that is completed on time and under budget. Support for training in advance of the need is an important element of having a successful project, completed on time and under budget, assuring that the project will not experience interruptions due to lack of skilled labor.
 - Strong local support. Local training results in strong local support and improved public relations for the project. Local communities develop a vested interest in the success of a project when the project owners give priority to local training and hiring.
 - Socio-Economic benefits of hiring in-country. Some companies track the socio-economic value invested, generated, and distributed as part of their ESG reporting.
 - Reduction of political risk and violence risk.
 - Compliance with domestic content provisions. Most local content framework agreements between resource development companies and host countries have “escape clauses” that allow the owners to source their skilled labor with foreign workers if the skills cannot be found within the local workforce. Reliance on foreign workers is an approach that carries high risk.
2. The benefits are further quantified below in this document.

² Unpublished study by Engineer. Johnson Awoyomi, Principal Consultant at Cost Engineering and Cost Control Services of Nigeria. <https://www.cengpcs.com/>

3. INTRODUCTION TO PHASE 1 PLAN

3. This Plan to provide world class training to a group of Tanzanian welding instructors is the first part of a four-phase program to train 5,000 Tanzanian welders on Tanzanian soil.



4. GFP International’s approach is in line with recommendations developed by the US Department of Energy and United States Energy Association with funding provided by the USAID, whereby existing local training institutions are supported to provide the training.³ These recommendations include the following:

a. Involve National and Local Government Officials and the Private Sector.

“Deliberate policies for training and local participation should be established by the host governments and energy companies involved in LNG project developments.”⁴

b. Identify Specific Skills as Early as Possible.

“Specific skills need to be identified as early as possible in the planning of a project to allow training to be organized and provided to meet project schedules.”

³ Global LNG Fundamentals, US Department of Energy, p. 74, 15 March 2018.

⁴ Id.

The capacity building effort should galvanize support from other stakeholders such as government, academia, and subject matter experts. It is important that the qualification of the intended service providers and the quality of the goods supplied are consistent with the requirements of the project with appropriate evaluation and monitoring protocols in place.”⁵

c. Foster Coordination Between Training Providers and Owners Project Management.

“The training could be delivered through a combination of formal instruction, (both locally and abroad), and supervised on-the-job-training (OJT). It can be provided or facilitated through various means and may require a partnership of academia, government, foreign government experts and other subject-matter experts. The training should be considered along the entire value chain with emphasis on the appropriate delivery for the needed goods and services. For LNG export and import projects, training should be considered in the initial assessment of the project’s economics and viability, through to the engineering, procurement, construction, and project commissioning phases.”⁶

d. Establish Close Integration Between the Training and the Workplace.

“Trained personnel should be gradually absorbed in appropriate phases of projects to provide them the opportunity to bridge theory and practice. On-the-job-training opportunities should be designed to have minimum disruption on a project’s workflow.”⁷

5. Tanzania has many individuals in the skilled trades such as electricians, carpenters, masons, bricklayers, plumbers, and equipment operators. These trades have skills which are transferable to construction in the power generation, chemical, process, and resource extraction industries as well as manufacturing. An apprentice can enter these general trades with on-the-job training. However, becoming a qualified welder requires extensive training for weeks, months and sometime over a year in a supervised classroom setting before entering the workforce.
6. One goal of this program is also to establish the first AWS certified welding school in Africa, followed by many more. While there are close to 200 AWS certified welding schools in the US, there are none in Sub Saharan Africa.
7. The need for welders in Tanzania is expected to grow significantly with several upcoming mega projects in Tanzania including the following:

⁵ Id.

⁶ Id.

⁷ Id.

- The \$35 billion USD Likong’o-Mchinga Liquefied Natural Gas plant. This plant is expected to need at least 15,000 workers during construction, including thousands of welders.
 - The \$10 billion USD Bagamoyo Port. Tanzania has decided to commence the project on its own, while also pursuing partners in the venture.
 - The \$5 billion USD East African Crude Oil Pipeline (EACOP). The total project is expected to require direct employment of about 14,000 people by the companies, indirect employment of about 45,000 people by the contractors, and induced employment of about 105,000 people as a result of utilization of other services by the oil and gas sector.⁸
 - The \$7.6 billion USD Tanzania Standard Gauge Rail (SGR) project. The whole project covers about 2,707 Km and is expected to improve transportation of cargo and passengers in the central African corridor. It is expected to reduce time and freight for cargo destined to neighboring countries like Rwanda, Burundi, Uganda, and the Democratic Republic of Congo.
 - The \$329 million USD new international airport in Dodoma.
 - The US\$ 900 million Tanzania-Burundi Standard Gauge Railway (SGR) Project. Tanzania and Burundi have entered an agreement to build a 282km-long standard gauge railway (SGR), which will connect the countries.
 - Numerous other energy and infrastructure projects.
8. Despite the great progress that has been made by trade schools in Tanzania, according to interviews with Tanzanian vocational educators, key industrial projects where certified welding is required are still being staffed with foreign welders due to the skills gap that exists between foreign and domestically trained welders, and lack of a certified AWS training facility. Phase 1 of the GFP International School to Work Program in Tanzania is to train ten Tanzanian welding instructors with the aim of becoming AWS certified instructors, among the first in Africa.
9. Throughout the course of all four phases of this program, GFP will establish and maintain a tracking system to identify the needs and timing for welders on the above listed projects and industry within and outside of Tanzania. GFP will establish a resource that includes welding assignments, schedules, time keeping, welder certification papers, and recertification schedules. This will be augmented with a placement program to be put in place by the end of Phase 3, as shown in the below timeline.

⁸ <https://petroleum.go.ug/>

4. THE PHASES

4.1 Gap Analysis

10. In January 2023, GFP International conducted a gap analysis to determine the state of existing welding training in Tanzania and identify the training, facility, and curriculum needs to meet world class standards. The following are some of our high-level findings.
11. A key finding in our analysis was regarding the curriculum for welding training. In general, about 85% of the training time in Tanzanian welding schools is spent on teaching welding theory and metals, and only about 15% of the time on skill development. This is just about the opposite of the practice in certified welding schools.

Figure 2
Skill vs Theory Curriculum Mix



12. This finding has some significant implications. Using a simple analysis, in theory, it would require 5 X the number of welding machines to produce the same number of certified if the theory/skill mix is changed as needed.
13. In addition to the needed changes to the curriculum, the welding training facilities and equipment need modernization and expansion.

Typical Tanzanian Welding Schools
No welding booths. Poor lighting. No ventilation. Lack of equipment.



Typical Modern Certified Welding Schools in the U.S.
A welding machine for every booth. Good lighting. Good ventilation. Fully equipped.



4.2 Phase 1 – Train 10 or More Tanzanian Welding Instructors to AWS Certified Standards, Commence Welding School Modernizations

14. The phases of the Program described below generally follow the timelines in **Figure 1** below.

**Figure 1
Timeline of the Phases**

Phase 1	10 Welders								
Phase 2		100 Welders							
Phase 3			1000 Welders						
Phase 4				5000 Welders					
Phase 5					Linde Project Construction				
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	

15. Executing this program will require support from governments, industry and the investor community. Execution of Phases 1 and 2 will provide an opportunity to confirm the scope, cost and schedule of Phases 3, 4 and 5 to meet the training goal of 5,000 welders.

16. With the assistance of the Don Bosco Training Centers in Tanzania, and VETA Vocational Schools, we have identified current welding instructors who will spend 10-12 months in specialized advanced welding training and instruction in the latest welding instruction methods. Each of these individuals have entered into binding agreements to return to Tanzania after their training and spend no less than three years as welding instructors there, working within existing trade training schools. This “train the trainer” program is at the core of Phase 1. Other activities will also be undertaken during Phase 1 to help plan for the implementation of Phases 2, 3, 4 and 5. These activities include:

- GFP International (GFP), will serve as Program Manager/Project Director for the School to Work Program. These activities may include but not be limited to:
 - a. Arrange and fund the train the trainer program in certified welding.
 - b. Provide managerial assistance and support for the engineering, procurement and construction of the expansion and modernization of existing welding schools in Tanzania.
 - c. Establish collaboration between project teams and host community leaders and training resources.
 - d. Identity the manpower curves for the projects to be served.
 - e. Based on the above information, we will determine the needs for facilities, training faculty, and schedule for developing all the resources needed to develop the host country skill content.
 - f. Work with collaborators to plan and develop the needed facilities, equipment, faculty, schedules, budgets to accomplish the goals.

- g. Continued collaboration with the human resources representatives of the industries and sectors to benefit from the program.
- h. Monitor progress and adjust timelines as needed.

17. In our preliminary plan, after consulting with Tanzanian authorities, welding school modernizations and expansions will be initially planned for the locations shown below.

Figure 2
Location of Welding School Modernizations and Expansions



4.3 Phase 2 – Train up to 100 welders / trainers in Tanzania, Africa.

- 18. A detailed Phase 2 plan will be developed during Phase 1. Below are some of the basic elements of Phase 2.
- 19. During the execution of Phase 1, a facilities and equipment plan will be developed and implemented. The goal will be to have enough physical capacity in place to train 100 welders beginning at the end of Phase 1. Hence, Phase 2 will need to commence during Phase 1 and

there will be some overlap between Phases 1 and 2. Based on a preliminary assessment, the existing welding training facilities and equipment and curriculum are not suitable for training internationally certifiable welders.

20. The facilities and equipment plan developed while the Phase 1 US training is still underway will be to assure that the 100 Tanzanian trainees planned for Phase 2 will have the necessary equipment to meet AWS training standards. In January 2023, GFP International conducted a gap analysis that included an inventory of existing welding training facilities and equipment in Tanzania, and a gap analysis to identify the minimum additional needs to accomplish the training of 100 welders in Phase 2.
21. Upon completion of Phase 1, the ten Tanzanian welding instructors who were trained by AWS Standards, will return to Tanzania where they each can train twenty Tanzanians, for a total of 200 trainees. Based on these parameters, at the end of Phase 2 and year 2, there will be 200 Tanzanians trained to AWS Standards. During this Phase 2 training, additional instructors would need to be identified from this pool of 100 welders to further expand the number of individuals in training during Phase 3.
22. A detailed Phase 3 plan will be developed during Phase 2.

4.4 Phase 3 – Train up to 1000 welders / trainers.

23. A detailed Phase 4 plan will be developed during Phase 3.

4.5 Phase 4.1 – Train up to 5,000 Welders

24. Upon arrival of Phase 4, we anticipate that the Tanzanian training infrastructure will be well established and upgraded to world standards. GFP will work closely with project owners to certify welders to job-specific welding procedures.
25. Working in cooperation with the welding schools in Tanzania, GFP will coordinate with the American Welding Society (AWS) and other certifying bodies to establish Africa’s first certified welding training and testing facilities.

4.6 Phase 4.2 - Placement of Welders in Jobs

26. Phase 4.2 will include job placement assistance to many of the welders who will have been trained in Phase 3 and Phase 4.

5. BENEFITS TO TANZANIA

27. The average earnings of a Filipino or Korean welder working on an international project is approximately \$1,200 per 50-hour work week, plus room and board. If Tanzania had a welder workforce of 5,000 certified welders working on international projects outside of Tanzania, the annual earnings of this group would be \$300 million USD per year. At a 30% tax rate, this would generate \$90 million USD in additional tax revenue for the Tanzanian treasury.

6. BENEFITS TO PROJECT INVESTORS

28. The cost savings to project investors could also be substantial with the use of local labor versus expat labor. GFP is still evaluating this savings, but one analyst has estimated that conservatively, the cost of a domestic welder is 40% less than an expat.⁹ This does not take into consideration the cost of room and board if the local welder lives in the vicinity within commuting distance from the project. When considering this factor, the savings could be greater.
29. Table 1 below provides a cost comparison between using expat welders vs domestically sourced welders for various size welding crews. As indicated in this table, a project with 1,000 welders would conservatively save \$24 million USD per year. A project with 5,000 welders could save \$120 million UDS per year by using domestic welders.

Table 1
Expected Project Cost Savings by Using Domestically Sourced Welders

No of Welders	Expat pay per 50 hour week	Domestic pay per 50 hour week	Total for all expat welders for one year	Total for all domestic welders for one year	Total annual savings to use domestic welders
1000	\$1,200.00	\$720.00	\$60,000,000.00	\$36,000,000.00	\$24,000,000.00
2000	\$1,200.00	\$720.00	\$120,000,000.00	\$72,000,000.00	\$48,000,000.00
3000	\$1,200.00	\$720.00	\$180,000,000.00	\$108,000,000.00	\$72,000,000.00
4000	\$1,200.00	\$720.00	\$240,000,000.00	\$144,000,000.00	\$96,000,000.00
5000	\$1,200.00	\$720.00	\$300,000,000.00	\$180,000,000.00	\$120,000,000.00

30. GFP is conducting further studies to evaluate the potential savings.

7. COST ESTIMATE FOR PHASE 1

31. See Attachment A for the cost estimate for Phase 1. (Pending)

8. CONTACTS FOR FURTHER INFORMATION

This is a living document and subject to revision and updating. To assure that you have the most recent revision, please contact Michael J. Vallez, Chairman/CEO of GFP International.

TANZANIA

Hilu Bura
GFP Board Member
hiluneemabura@gmail.com
+255 767 345 341

USA

Michael J. Vallez, P.E., MBA
GFP International – Chairman/CEO
mjvallez@gfp-intl.org
(801) 502-0951

⁹ Unpublished study by Engineer. Johnson Awoyomi, Principal Consultant at Cost Engineering and Cost Control Services of Nigeria. <https://www.cengpcs.com/>

Signed: 

Name: Michael J. Vallez, P.E, MBA, Lean-6Sigma
Chairman/CEO
GFP International

Dated: August 28, 2023

Notice: As a US based non-profit entity organized as a 501(c)(3) organization, GFP International is allowed to provide tax deductible contribution status to charitable donations received within the US. However, GFP can accept funds from any party.

ACKNOWLEDGEMENTS

This strategic plan document has resulted from extensive discussions, inspections, trade school visits, and interviews with a broad range of Tanzanian stakeholders. Special thanks goes to Mr. Ryan Eubank, Nick Price, Sibiu Mpapane and Pastor Michael Killagane who spent two weeks with us in Tanzania to conduct our investigations and interviews. We have applied our industry knowledge and experience with the wisdom of the many individuals we met along the way. These photos are meant to acknowledge the contributions made by many; without whose input this strategic plan could not have been created.



June 2022

Michael Vallez, Chairman/CEO of GFP International meeting with Hon January Makamba, Tanzanian Minister of Energy



January 2023

GFP leaders and advisors with welding students at the VETA School in Linde, Tanzania



January 2023

GFP International Chairman and Welding Advisory Team with Dr. Noel Mbonde, Tanzanian Director of Technical Education. From left to right: Nick Price, Director of Welding Training at Davis County Technical School, Ogden, Utah; Ryan Eubank, welding consultant and trainer, Cleveland, Ohio; Dr. Noel Mbonde, Director of Technical Training, Dodoma Tanzania; Michael Vallez, Chairman/CEO of GFP International, Salt Lake City, Utah; Subu Mpapane, South African metallurgical engineer, industrial contractor, welding expert.

January 2023

Special Partnering Meeting with Dr. Noel Mbonde, Director of Technical Education and Hon Adolf Mkenda, Member of Parliament, and Minister of Education, Republic of Tanzania.





January 2023

With Mr. Fihili Challenge, DAB Coordinator, and Ms. Anna Nyoni, Curriculum Developer,
Vocational Training and Education Authority (VETA)



January 2023

With Mr. Anthony Kasore, Director General of VETA
(Oversees 43 existing training centers with 23 under construction)



October 2022

Michael Vallez and Dunford Mpelumbe meeting with Father Boniface Mchami, Principal of Don Bosco Technical School and his instructors in Dodoma, Tanzania.



August 2023

Michael Vallez, GFP Chairman/CEO with Tanzanian Ambassador to the U.S., H.E. Elise Kanza



June 2022

Michael Vallez, Chairman/CEO of GFP International meeting with Father Waldemar Jonatowski, Principal of Don Bosco Vocational School, Dar es Salaam



June 2022

Michael Vallez, Chairman/CEO of GFP International meeting with Mr. Joseph Mwanda, Principal of VETA Vocational School, Dar es Salaam.



January 2023

With Mr. Khalid Songoro, President, Songoro Marine and Shipbuilding, the largest employer of welders in Tanzania.



June 2022

Michael Vallez, Chairman/CEO of GFP International, meeting with Mr. Khalid Songoro, President of Songoro Marine shipbuilders in Dar es Salaam.



January 2023

Ryan Eubank, GFP Advisor, doing some coaching with one of the welding students.



January 2023

GFP International leadership and advisory team with VETA Principal Harry Mmari and his team at VETA school in Lindi Tanzania.



January 2023

Ryan Eubank enjoying the camaraderie with future welders in Lindi, Tanzania.



January 2023

With Mr. Ally Msaki, Permanent Secretary, Ministry of Employment and Skills Development, Republic of Tanzania



January 2023

With Father Waldemar Jonatowski, Principal of Don Bosco Trade School, Dar es Salaam



January 2023

Enjoying an evening over dinner with a Tanzanian Welders Association (Sadly, none of these men or their welder friends could get hired on the EACOP Pipeline Project)



October 2022

Michael Vallez accepting the walking stick gift from Matambile Mgema, Massai leader near Ruaha National Park.



October 2022

Michael Vallez, Chairman/CEO of GFP International meeting with Mr. Stanslaus Mtibara, Principal of VETA Dodoma.



January 2023

With Father Waldemar Jonatowski, Principal of Don Bosco Trade School, Dar es Salaam



The next opportunity, Electrical.