

2020-2021

# Graphene Report

Empowering Marginalized Women

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**GIZA**  
SYSTEMS  
Education Foundation

# Introduction

Giza Foundation (GF) reaches out to marginalized communities to understand the barriers they face while researching methods that will empower them. GF follows the United Nation's Social Development Goal number 10 (SDG 10) and aims to do the following:

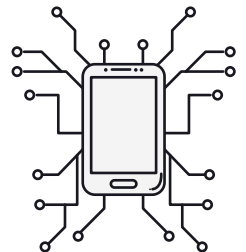
- Empower and promote the social inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion, or economic or status.



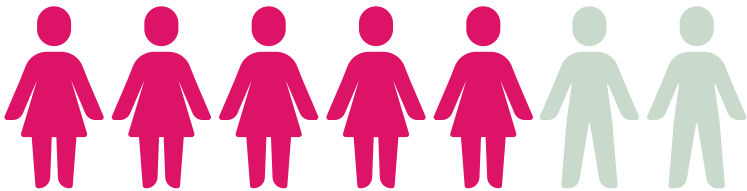
- Open up routes to economic empowerment and financial inclusion so that marginalized communities can enjoy decent work and achieve financial independence. This will mean creating more and better jobs, providing social protection, ensuring the necessary skills training, making workplaces accessible, and employment.



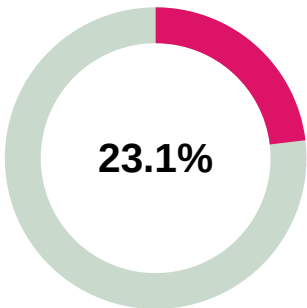
- Revolutionize the availability and affordability of appropriate technology, including digital, which will enable all Egyptian youth to fully participate and contribute to society.



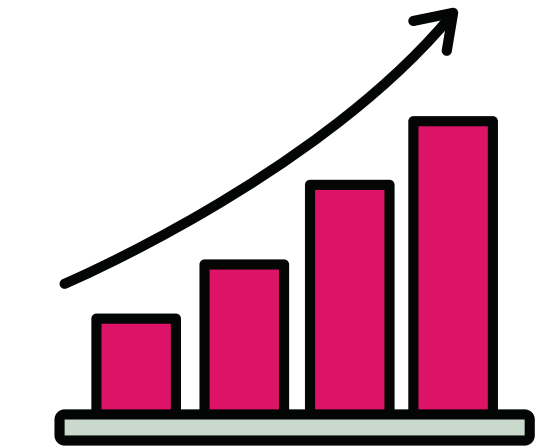
Since most of the findings indicate that women face more inequalities than men, Giza Foundation (GF) aims to empower marginalized women to help reduce inequalities in Egypt. 23.1% of women participate in the labor force and their unemployment rate is 2.5 times higher than men's ("What we do: Economic empowerment," n.d.). Also, according to USAID, 65% of women are literate while 82% of men are literate. However, if the rate of employment of women were equal to that of men, it would increase Egypt's GDP (Gross Domestic Product) by 34% ("Gender Equality and Women's Empowerment | Egypt | U.S. Agency for International Development," 2020).



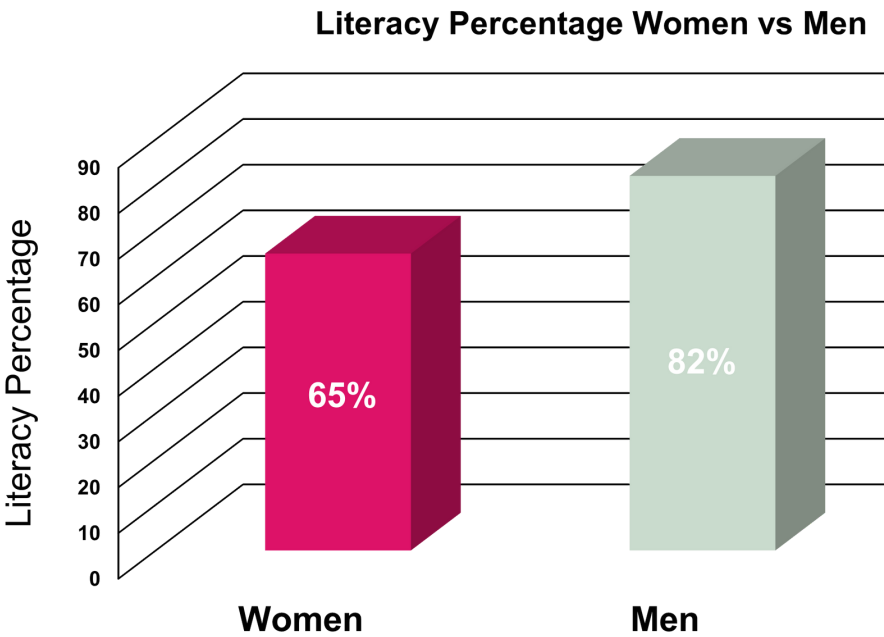
Women's unemployment rate is 2.5 times higher than men's.



23.1% of women participate in the labor force.



**+34%** Egypt's GPD if women's employment rate equal to men's.



# Problem Found in Communities



## Helwan University: Home Economics Graduates

Many women in Egypt continue to encounter discrimination against them. This act places barriers and obstacles which restrict them from achieving their full potential. A barrier that society has placed for women who graduate with a degree in Home Economics is that they can only use their qualifications to teach Home Economics in schools. This perception limits graduates' chances of finding decent job opportunities. Also, the jobs available to graduates do not provide a stable environment or adequate salaries.

## Shandawil Village

Shandawil village is located in Sohag and has a population of 37,903, of which 19,864 are men and 18,039 are women. Although the male population is slightly higher, they tend to flee the village to find decent job opportunities in cities.

The people in Shandawil do not see the value in a woman's education as they believe that women will eventually settle down and will need to be attentive to their spouses and housework. This perspective is related to culture. However, many young girls and women want to return to their education. As one of these young girls said, "I would like to be able to read so I can understand the medication that the doctors prescribed for my mother."



# Program Goal

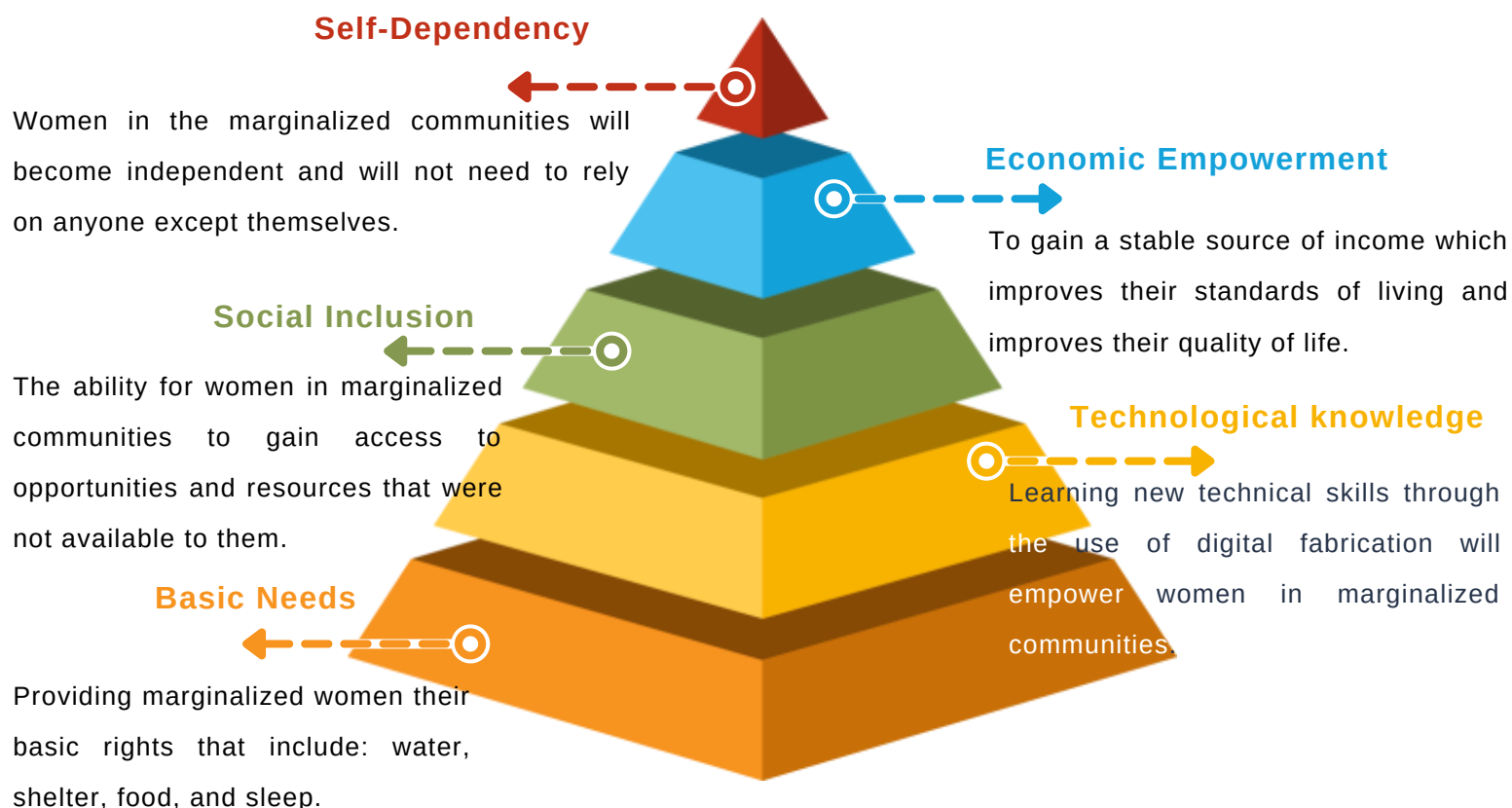
## The Solution

### Maslow's Hierarchy of Needs

The Giza Foundation decided to follow Maslow's Hierarchy of Needs to enable and empower marginalized women.

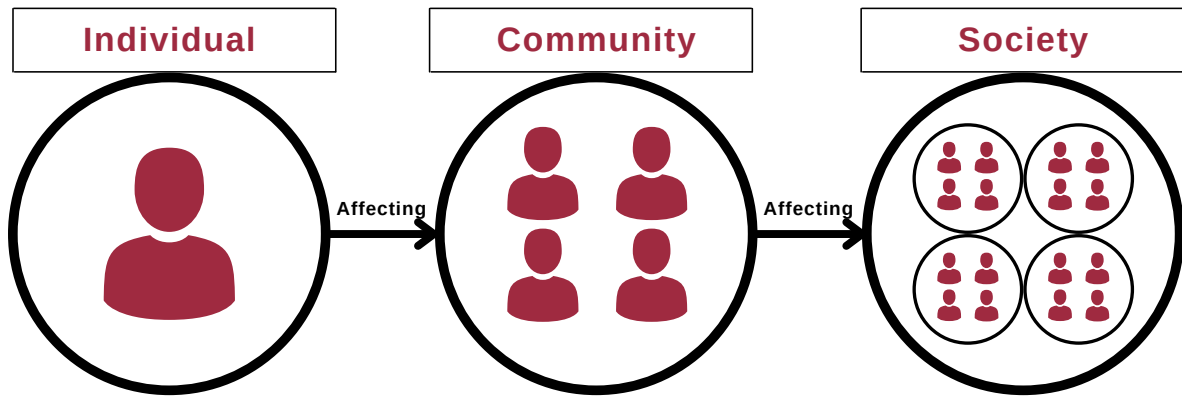
From October to December of 2020, GF chose three women who graduated from Home Economics, from the University of Helwan: Noha, Tasneem, and Jihad; and five young girls from Shandaweel Village: Nancy, Manar, Donia, Nada, and Aya. Both of the groups came from different cultural, environmental, and educational backgrounds, which allowed GF to implement the methodology of "Learn, Implement, and Teach."

Each activity has been tailored to fit the group's background and needs. Yet, the program will lead both of the groups, onto similar paths, which allow them to achieve the same goals of economic empowerment, problem-solving mindset, and technology awareness.



## Theory of Change

Also, Giza Foundation decided to adopt Nitrous's pilot phase blueprint to target the marginalized women to create impact. GSF uses the 'Theory of Change' while implementing Nitrous's blueprint. This theory initiates by working on and empowering the individuals, then those individuals empower their community, and finally, the community empowers society.



## Project Nitrous Concept Note

Project Nitrous had a successful pilot phase where they were able to reach and expand on their targeted beneficiaries (people with disabilities) while involving each community member in their process and providing assistive tools that could simplify their daily tasks and challenges. So, when Graphene began its initiation phase, it used Project Nitrous's concept note but replaced the target beneficiaries with marginalized women, and instead of creating assistive tools, graphene community members would create and develop upcycled products. The concept that remains unchanged is the involvement process. This is because the involvement activities are required to achieve social inclusion and economic empowerment objective.

## Graphene Team Capacity

There were a total of seven team members that were working on Graphene's initiative.

Four were in Cairo:

- One project leader
- Two digital fabrication engineer
- One community engagement

Three were in Sohag:

- One digital fabrication engineer
- Two community Engagement

# Initial Process

## Graphene Community: Cairo

### Learn

Using the "Learn-Implement-Teach" methodology, Jihad, Noha, and Tasneem were exposed and taught different technologies: Adobe Illustrator and the laser cutting machine. In addition, each week, the Graphene community members took two classes on interpersonal skills, which included the following: eight working habits, time management, goal-setting, emotional intelligence, self-awareness, FDRA (feedback, discussion, reflection, and action), and the six winning behaviors.

Throughout their learning period, GSF noticed a delay in product delivery due to the sewing process. Thus, they provide two sewing machines called the Sun Sir, which is half computerized to increase their efficiency. The difference between these sewing machines is the ability to sew thicker materials



### Implement

Graphene community members started to develop designs in Adobe Illustrator to sketch the pattern of the product. Then they used the laser cutting machine to produce the products made from Illustrator. Jihad, Noha, and Tasneem would search for and buy products and items that they needed for their products. Each product produced had a high percentage of reused material. The reused materials that they have used are the following:

- Billboards
- Banners
- Ship's Flag



When Noha, Jihad, and Tasneem were done with their prototypes, they started to produce products that were ready for feedback from their target audience. They were able to produce 22 prototypes and 7 final products.

### Teach

Jihad, Noha, and Tasneem hosted two workshops throughout the three months. The first workshop was a two-day program that was conducted in Cairo, and the workshop aimed to educate the audience on how to use Adobe Illustrator, develop a design, produce the product on the laser cutting machine, and how to close up the product using different stitching mechanisms. The second workshop had the same content but was recorded and sent to the young girl from Shandawil Village.

### First Product Delivered

The below Laptop Folio was delivered to their first customer in December 2020.



From *January to February*, the community members received feedback on their products from their five customers. Then, they started experimenting, with materials purchased from Wkalet Al Balah, through the prototyping process, with different designs and materials to enhance their products. Throughout these two months they were able to finalize the following designs:

- Laptop folio
- Laptop case
- Shoulder bag
- Big wallet
- Bucket bag
- Shopping bag



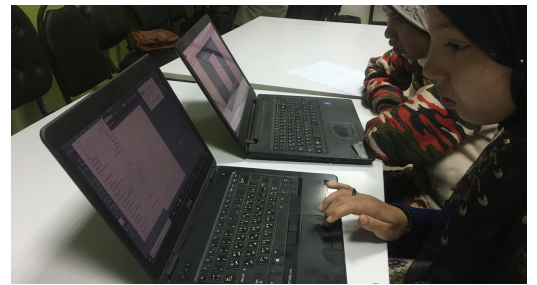
The community members noticed that purchasing materials from Wkalet Al Balah was not a financially sustainable method due to its consumption of limited financial resources. This is when they launched a campaign that showcased the upcycling process and its benefits while encouraging stakeholders to provide them with their old billboards and/or banners which will be transformed into useful products that can use as employee giveaways.

## Graphene Community: Sohag.

Initially, GSF provided clean water to the people living in the village, along with monthly allowances. Then, the team at FabLab Sohag started meeting the parents of Aya, Manar, Nada, Donya, and Nancy to explain the benefits of the program and gain trust to allow the team to begin the program. The team was able to successfully gain their trust and started to meet the young girls twice a week at the lab in Sohag.

### Learn

The team taught the young girls how to: operate and navigate a laptop, use Inkscape to develop designs, and operate the laser cutting machine to produce the designs. The team designed games to enhance and develop the young girls' communication skills. However, Manar faced difficulties since she did not know how to read and write the alphabet and the team started teaching her, and this process was done through the educational tool kits.



### Implement

Graphene community members, in Sohag, started to create shapes and designs in Inkscape and operate laser-cutting machines to produce them. They also started designing other products for their friends and family members. In addition, they were able to search for things online, open up Microsoft Word and Excel, and understand some of the functions used in both applications.

One issue that was common among them was that they did not remember certain functions of Inkscape because they did not have access to computer devices to practice. The team resolved this issue by providing each girl with a laptop, allowing them to practice at home.





## Teach

One of the gatherings occurred in Shandweel Village, and Graphene community members took the lead to explain the elements and how to develop designs on Inkscape to their neighbors, families, and friends.

Also, since Manar had a problem with reading and writing the alphabet, Aya and Nancy started to help Manar and encourage her throughout the process.



From January to February, the young girls continued to experiment with different designs in Inkscape. Along this journey, Graphene lost three community members: Nada, Donia, and Manar. For Donia and Manar, it was the money they used to receive that caused one of the girls to disrespect her father, and the father regained control by forbidding his daughters to attend any program. Nada is getting married, and this caused her father and fiancé to stop her from attending any program.

After reviewing their progress and understanding Graphene's objectives, mission, and goals, the young girls were placed into GSF's Children Program.

## Sustainable Store

Graphene community members' products are currently available at <https://www.gizafoundation.com/sustainable-store>. GF decided to create a sustainable store to showcase all the products that have been designed and produced by the groups/individuals who are enrolled in one of these programs:

- Marginalized women and young girls.
- Underprivileged children
- Individuals with Disabilities

This website is also considered a marketing platform for the Graphene community members, as it allows GF's audience to view and purchase the products available.

### Filter by

Collection —

All  
Graphene  
Al-Serraj

Price +

Color +

Clear filters x

Sort by



Laptop Folio  
Out of stock



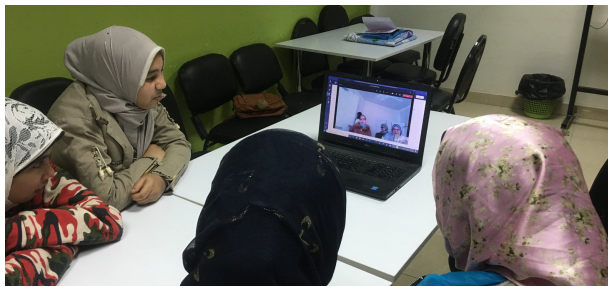
Laptop Folio  
Out of stock



Laptop Case  
Out of stock

## Virtual Gathering

Graphene community members hosted a virtual gathering to introduce the members of Cairo and Sohag to one another and to motivate them by sharing success stories. One of the success stories that occurred in Shadawil Village was Aziza, who was able to create a business even though she had limited resources. Azza Ismail, the mother of Nancy and Aya, joined the virtual gatherings.



## Orders from Partners

### Graphene Community: Cairo

In March, they received their first bulk order from Giza Systems. GS provided them with banners and requested that they be upcycled into shopping bags. The three women were able to produce 6 shopping bags.

In April, UNDP provided them with roll-ups and requested to receive upcycled shopping bags and laptop folios. In May, Beltone Financial Company provided the initiative with rollers and banners, which were of different materials compared to the previous orders, and requested to receive the following: cardholders, file covers, and laptop folios.

In August, Youth Leader Foundation provided Graphene community members with banners and roll-ups, however, due to the lack of funds this order is currently placed on hold.

Graphene community members received a total of 160 rollups and banners and produced 95 upcycled products.



## Graphene Hackathon

To develop new upcycled products with different materials in a short period, while attracting women who could become community members of Graphene, the Graphene Hackathon was organized in May of 2021 and launched in June of 2021 as a hybrid event. This hackathon outlined the waste generated from the constant use of new materials to produce products and how a simple process known as upcycling is used to eliminate that waste.

The application was sent to Helwan University and Youth Leader Foundation and 20 community members registered. However, an issue faced was regarding the hackathon timing since this was the examination period for those who were in universities and schools. Hence, 10 of those participants were not able to join. There was a total of ten participants who were from:

- Three from home economics
- Two from applied arts
- Two from vocational education
- Three from Shandawil Village



The participants received a three-day training program on the following: laser cutting machines and Adobe Illustrator while learning and implementing the "Design Thinking" methodology, and on the fourth day, the participants went to the labs to produce the design. On the fifth day, the participants presented four products: a shoulder bag, an organizer bag, an apron, and a backpack.



## Retreat

Giza Systems Foundation planned a retreat in Fayoum to gather all of the community members from each program. Graphene community members from Cairo and Nancy from Sohag attended. At the retreat, a workshop was conducted to create a lean canvas for each program and this helped the Graphene community to generate new ideas for their program with the additional help of other community members who came from different programs.

## Greenish Festival

Following the end of the Graphene Hackathon, the community members from Cairo participated in the Greenish Festival on September 3rd, 2021, to showcase their products and collect feedback. Greenish, the host and organizer of this event, reviewed Graphene's initiative, understood the mission and vision, and provided a free slot for the community members to place the booth. At this event, the women took the lead in engaging with the audience by creating a game called "Spin to Win." Here, the event attendees would spin the wheel, guess the sewing pattern, and if they guessed correctly, they would receive an upcycled Graphene product, for a total of 50 products were given away. Also, the team created a survey to gather data that will help enhance their existing products, understand the stakeholders' mindset, and get insights into the current "green" market.



Also, the community members expanded their network and connected with Very Niley, Scarabaeus Sacer, Rise Egypt, and Alliance MENA. In addition, MBC Misr and [Al Arabiya Egypt](#) interviewed Graphene community members about the initiative.



## Mega Competition

One of Graphene's goals is to help the community to reach economic empowerment and self-dependency. This goal can be achieved if the community members were able to launch a start-up by transforming their ideas into a reality. This is why the team encouraged the community members to join the Mega competition.

The Mega Competition was organized and hosted by Project Nitrous and Giza Systems Foundation in 2021 in November. This event was open to individuals or groups that are aiming to launch their start-ups that focus on providing solutions and empowering the Egyptian community through either of the following tracks:

- Graphene
- Ants
- Project Nitrous

However, some of Graphene's community members from Cairo did not want to participate and this was due to the following reasons:

- Three women needed a stable source of income and could not commit a full month without receiving a salary.
- One of the women did not care about the training and wanted to produce work that can provide her with a stable source of income
- Two of the women registered and dropped out after the first two sessions. This was due to poor time management skills because they were not able to balance between school and competition

Although the Graphene community members from Cairo did not commit or participate, the competition had a total of ten participants, four of whom were enrolled in the upcycling track. However, the Graphene community members from Cairo did not register for this event. Yet, Azza Ismail from Sohag, along with her sister Heba Ismail and Shaimaa Mohamed, and Lamiaa Essia, who are both visually impaired, from Fayoum, joined.

In the first two weeks of November, the participants received training to help prepare them for the event. This training covered: interpersonal, leadership, and social entrepreneurial skills. After completing the training, they chose their preferred track, and in the third week of November, they began creating and developing prototypes of their social start-up ideas, and in the fourth week, they pitched their business model and prototype to the judging panel. Azza Ismail, Heba Ismail, and Lamiaa Essia were the three out of four winners from the competition.

## Competition Winners (Upcycling Track)

### Azza Ismail

After stumbling across a news article that mentioned the high waste percentage generated by fast fashion, Azza decided to upcycle old clothes into new ones through the use of digital fabrication machines. This is to ensure that quality is maintained and production speed is unified. Also, Azza aims to create a brand that is affordable for the families within her community. And this was how **جدد هدمك (Renew your clothes)** was born! Watch the video to know more about her start-up.

### Heba Ismail

She was eager to make a difference in her community. So, she chose the "Graphene: Upcycling" track and decided to develop a platform that allows women of different ages to place their upcycled products to market and sell them. This platform aims to provide new opportunities and a sustainable income for the women in the village and Egypt which is called بيكيا كرافت (Bekia Craft)

### Two Ideas Into One

Azza and Heba came up with solutions that enable and empower their community while preserving the environment by providing sustainable items at affordable costs. Although each of their start-up ideas may seem different, they still go hand-in-hand! Now, both of these women will integrate their ideas into a single startup.

### Lamiaa Essia

Her social start-up idea is to gather the fabric waste from manufacturers and develop them into handmade gifts هدية بأيديا while using digital fabrication machines. Also, she aims to empower women by training them on the methods of upcycling and how to use digital fabrication machines to produce a product.