

## »» DEG evaluation results



### Bridging the skills gaps in Pakistan

Engro Cooperation (Pty) Ltd. –

A multi-business holding advances its business growth and secures its social license to operate by successfully tackling local skills gaps

This case study is part of a larger study on skills gaps: *“Bridging the skills gaps in developing countries – A practical guide for private-sector companies”*. For more information, please refer to DEG’s website: [www.deginvest.de](http://www.deginvest.de) under the header “what is our impact”.



This report is a result of DEG's evaluation work regarding development effectiveness. DEG's monitoring and evaluating team checks at regular intervals whether the transactions it co-finances help to achieve sustainable development successes and points to ways of making further improvements for DEG and its customers. To ensure the independence of evaluation results, external consultants support the work of the team.

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Photos: Engro Cooperation (Pty) Ltd.

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# Engro Corporation Ltd.

## A Pakistani multi-business holding advances its business growth and secures its social license to operate by successfully tackling local skills gaps

### Executive Summary

Engro Corporation Ltd. (hereafter Engro) is a Pakistani group active in the fertilizers, foods, energy, and petro-chemicals businesses. The main business has been that of fertilizer production, initiated in 1968, but the company has in recent years successfully grown other businesses, and is constantly striving to expand its reach in Pakistan and beyond.

Within Pakistan, Engro has an excellent reputation, and is able to attract and select among the best graduates of the country's engineering and business schools. However, with its fertilizer production based in the Ghotki District, which is mainly rural and with very modest education levels, Engro finds it difficult to recruit properly trained locals, and has to hire workers from other areas in Pakistan – something that attracts criticism from the local population and media. Being a pioneer in many fields (for instance, energy generation from permeate gas) and continuously growing its business, Engro has to develop skills internally, especially in the case of its leadership personnel. A further challenge is this: through its foods and fertilizer businesses, Engro is deeply involved in Pakistan's agricultural sector, and that sector is still characterized by small-holder farms that have little access to modern farming techniques and have low productivity levels.

To tackle the skills gaps, Engro invests heavily in order to develop skills among its workforce, throughout its value chain, and in the community. For its internal skills development, Engro systematically assesses the competencies of its employees and makes tailored training plans. Moreover, it has a group-wide mentoring program, and offers its staff leadership courses at leading universities in order to develop talents internally. To increase the proportion of locals in its skilled workforce, Engro (together with other petrochemical companies) has formed a Public-Private Partnership (PPP) that established and now runs a technical training college (TTC) in Daharki, which since 2011 has been offering a three-year diploma for chemical and mechanical technicians. The first graduates have now joined Engro (and the other firms). Given the success of the program, the college's capacity has been increased, and it now offers other subjects, as well as six-month vocational training courses.

Regarding skills development in the value chain and in the community: Engro is always striving to maximize the quality of the rice and milk inputs for its food business and to increase the sales of its fertilizer business, so it has been developing the skills of thousands of small-holder farmers – training them in modern farming techniques, such as optimal sowing and conservation methods and fertilizer management. For its suppliers of milk, the company has implemented the Women Empowerment through Livestock Development (WELD) project, which trains women to work as milk collectors or else as extension workers offering basic advisory and veterinary services to family farmers, and providing relevant training to the women on those farms. Fertilizer production poses various problems: it involves hazardous materials that can cause great damage, so the local population is constantly concerned and critical, and has often staged protests in the past. To improve community relations and secure the social license to operate, Engro helps to provide high-quality education for the local population: it has adopted 33 public schools, and contributes to the training of teachers.

For Engro, addressing skills gaps has benefits for the company itself. The investment pays back. By supporting the TTC and local schools, the company achieves a dual goal: it secures highly qualified workers, who are likely to stay with the company longer and will potentially climb the career ladder, and it also improves community relations, in that the share of locals within the workforce is now rising. By conducting skills development among its rice suppliers and milk suppliers (who are also clients for its fertilizer business), the company improves the quality of its supplies and increases the sales of its fertilizer products.

For the local community, the beneficial social impact, especially for women, is considerable. The initiatives improve the productivity and hence the livelihoods of thousands of small-holder farmers, and provide direct employment for more than 500 trained women. The increase in milk yield alone more than pays off the investment for the WELD program. And the empowerment of women is truly transformative for their lives and for the patriarchal Pakistani society as a whole. In addition, there is Engro's involvement in providing high-quality education for the villages surrounding its production facilities: this engagement has extensive positive effects on the communities and on the life prospects of the children being educated.

Engro's example produces a number of good practices that other companies could adapt to their situation: a systematic succession-planning initiative, which takes into account the company's strategy (good practice 1.3 in the good-practice framework for workforce development described in Chapter 2.1); an employee engagement survey as a barometer for employee satisfaction (5.3); a group-wide mentoring system to develop the leaders of the future (5.5); and partnering with established partner organizations (4.3).

## 1. Company background

Engro Corporation Ltd. is a Pakistani multi-business holding active in the fertilizers, foods, energy, and petro-chemicals business.<sup>1</sup> Engro's history dates back to 1957, when its predecessor company, an Esso/Mobil Joint Venture, discovered the Mari Gas field in the Ghotki District – a discovery that formed the basis of urea fertilizer production. As Pakistan's first producer of a fertilizer brand, the company was involved in modernizing the country's agriculture sector. When Exxon decided to divest in 1991, Engro's employees, together with international financing institutions, acquired Exxon's 75% equity. In 2002, after expanding its fertilizer production, Engro decided to enter other business sectors, such as foods and energy.

Engro Fertilizers Limited was officially incorporated as a separate company in June 2009, following a decision to demerge fertilizer activities from the parent company. While the group and business-unit headquarters are located in Karachi, production of Engro Fertilizers is still based in the Ghotki District, in the city of Daharki. It was here that the company built the world's largest (as it was at the time) single-train urea plant, and became the leading urea manufacturer in Pakistan.<sup>2</sup>

In 2014, Engro had 3,824 employees, and generated total sales of USD 1.7 billion, representing a 13% growth in revenue over the previous year.<sup>3</sup> That puts Engro among Pakistan's 20 largest companies.<sup>4</sup> Engro Fertilizers is the group's largest business unit, accounting for about 50% of revenues, followed by Engro Foods (mainly dairy products) and Engro Eximp (rice and potash).

## 2. Pakistan's skills gaps: The public education system vs. industry demands

Even though secondary-school enrollment in Pakistan increased from 25% to 38% between 2005 and 2013, education attainment remains at a comparatively low level.<sup>5</sup> And unsurprisingly, the figures for tertiary education figures are even more modest: enrollment of 4% in 2005, and about 10% in 2013.<sup>6</sup> The current population is an estimated 180 million, and is growing at about

2.2% a year, so the country is expected to have 236 million people in the working age group by 2050. However, reports suggest that less than 6% of the current youth population has acquired any technical skills through Technical and Vocational Education and Training (TVET). So the majority of Pakistan's emerging labor force is lacking in education or in skills or in both. One problem is that in Pakistan, as in many countries, the implementation of TVET has shifted between different government departments, whose mandates partially overlap, hampering good governance and accountability.<sup>7</sup>

In line with the general trend in Pakistan, the province of Sindh, where Engro Fertilizer is located, has very modest educational attainments. From an analysis of the labor force in Sindh, it appears that a high proportion of the economically active population either has no education at all or less than one year's education (40% in 2010-11).<sup>8,9</sup> The province's unemployment rate remains below the national average, even though it did increase significantly, from 3.1% in 2007 to 5.1% in 2011.<sup>10</sup> Yet, the Ghotki District in the north-east of Sindh province, where Daharki is situated, has a much higher level of unemployment. The labor market in Sindh has a dual nature related to two different dynamics – on the one hand, that of the more developed urban centers, like the metropolitan region of Karachi; and on the other, that of the less developed rural areas. Daharki, home base of Engro Fertilizer's main production site, is a business center with numerous industries, particularly cotton factories and oil- and gas-exploration companies.<sup>11</sup>

Even though Daharki itself is relatively wealthy, Sindh as a whole is facing major economic challenges, largely owing to the low skills base of its labor force. An assessment of selected TVET institutes in the province, conducted by the organization CARE, reveals that these institutions currently provide services to only a very small fraction of the young population.<sup>12</sup> Among the major weaknesses are: outdated curricula; a mismatch between the skills taught and those demanded by industries; inadequate quality-assurance mechanisms; a shortage of physical and learning resources; and low participation of the private sector. Furthermore, the assessment found evidence that the TVET system is not demand-driven: linkages to industry are fragile, poorly planned, and inadequately supervised. In interviews, employers unanimously complained that graduates were trained only in basic skills, so that each industry has to undertake its own in-house training in order to equip the TVET graduates with the requisite skill and knowledge. Going one step further, and examining the reasons for low enrollment in formal TVET institutions, the assessment identified the major obstacles as lack of information about the institutions and a general shortage of institutions in the rural areas. The latter point explains why Daharki's surrounding district – Ghotki, with a rural population of more than 80% – is particularly hard hit by a lack of skilled labor. The total skilled labor force amounts to about 4,500 workers – a mere 3% of the district's total population. This shortage partly accounts for the district's serious unemployment problem.

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[All notes at the end of this chapter \(Page 17\)](#)

### 3. Engro's skills gaps: Lack of experienced production supervisors and of local technical staff

By virtue of being among Pakistan's top employers and very popular with graduates, Engro attracts a large number of applicants from across the country – amounting to 5-10 times the number of vacancies – and can select the best candidates from that pool.<sup>13</sup> The company has a low attrition rate (by Pakistani standards) of about 7%, but its recruiting needs persist, largely owing to its continuous expansion. Of the employees who do leave Engro, many go abroad to work in the Middle East or in the United States. A couple of internal skills gaps affect the company on the operations side – notably, a shortage of experienced supervisors, and the scarcity of trained technicians and plant operators in the local community. Figure 1 provides an overview of these internal skills gaps at Engro Fertilizers.

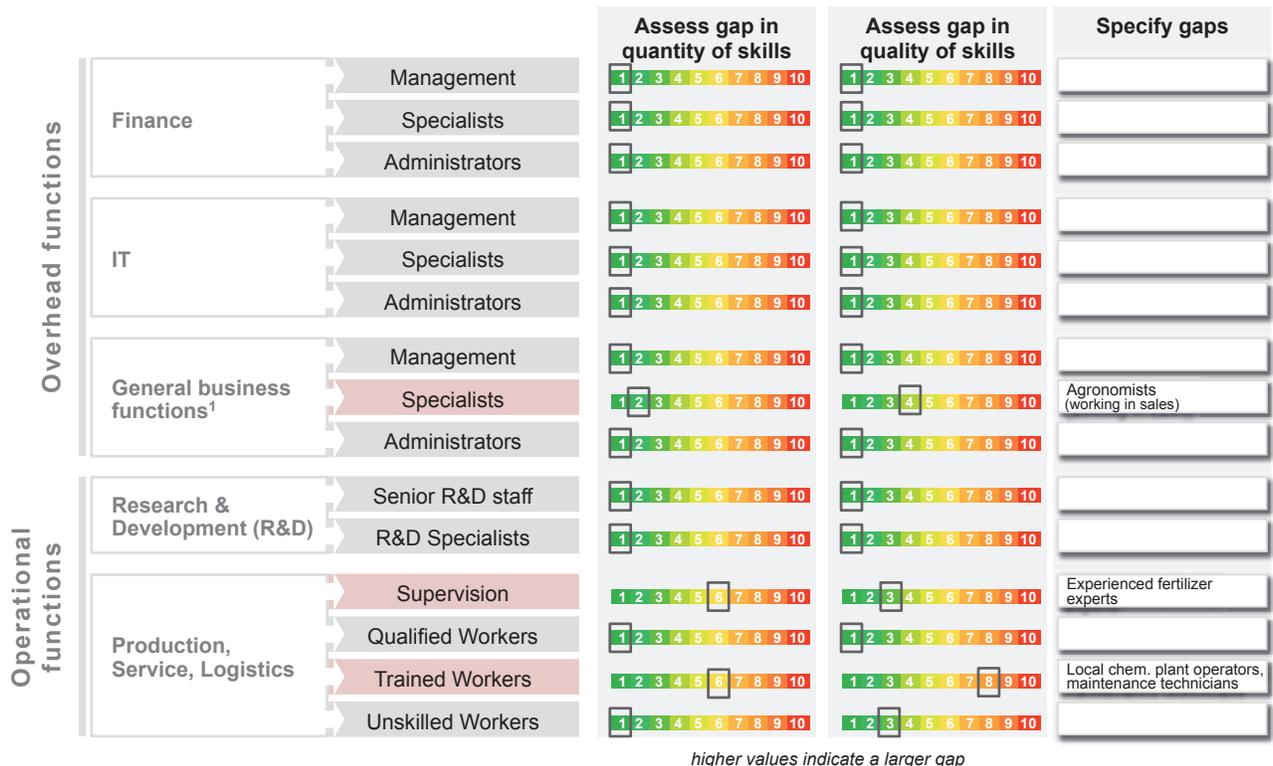
#### Administration: Minor shortage of agronomists to work in marketing and sales

In administration, Engro Fertilizers has no difficulty in filling most vacancies with highly-qualified candidates, and it has a low attrition rate, allowing it to develop its management personnel and their skills internally. The one recruiting challenge that it does face is that of finding enough agronomists to work in marketing and sales, where they reach out to clients and partner companies: these skills are generally rare in the country.

#### Operations: Difficulties in finding properly trained personnel from the local area

In production, Engro Fertilizers attracts the country's best engineers, and has no difficulty in filling vacancies, even though the company is growing continuously. And as for unskilled labor, there is never a shortage, given the region's high unemployment rate. The main recruiting challenge for the company has been in finding properly trained technical staff in chemical and mechanical engineering from the local area around its production site in Daharki. Despite being an industrial center, the district had no technical training college until recently, and the quality of public-run schools in the district, as in Sindh province generally, remains low. Accordingly, to acquire the requisite skills, the company has had to hire workers from Karachi or other areas that are more developed – a policy that has led to criticism from the local population and the media. Another challenge has been at the supervisory level – i.e. production experts with 5-6 years of work experience: Engro cannot easily recruit suitable candidates in the market, as there are only a few fertilizer-producing companies in the country, and Engro has very high quality standards. The solution has been to build these skills internally, and to gradually develop successors for those employees that leave. Generally, the company's need for new production workers and supervisors is constant, as the business is growing continuously (23% over the last year), and the company is considering expanding to new markets in Africa or Asia.

Figure 1: Assessment of Engro's skills gaps



1. Human Resources, Marketing and Sales, Communications etc.fit

## Suppliers and clients: Lack of knowledge about modern farming techniques

Pakistan's agriculture is still widely characterized by small-holder farmers who rely on mainly traditional farming techniques. For Engro, these small-scale farmers have a dual role: as clients for its fertilizer business, and as suppliers of raw materials (specifically rice and milk) for its food-producing business units. Although Engro Fertilizers does not primarily sell directly to small farmers, it is these farmers who constitute the final customers for its products. Engro Foods collects milk from thousands of farmers to produce dairy products (notably, beverages and ice cream). And Engro Eximp buys rice from thousands of farmers, for processing in the country's largest rice processing and finishing mill. The contrast is stark: while Engro's business units all use state-of-the-art technology, the farmers generally have very limited knowledge about animal health and little expertise in modern farming techniques such as direct seeding of rice, resource conservation, efficient sowing, and fertilizer management (they still rely mainly on nitrogen). So their productivity has remained low, and the quality of their produce has often been unsatisfactory.

To sum up: Engro Fertilizers has few skills gaps on the administration side, as it can select among a large number of highly qualified candidates, thanks to its strong employer brand. The same applies to the operations side – at the engineer level and at the unskilled labor level. Where the problem does occur on the operations side is in finding trained technical staff from the local area (the education level of the local community is generally low) and in finding experienced production managers and supervisors (there are very few fertilizer companies in Pakistan). The other main skills gap that Engro Fertilizers has to deal with is that which characterizes its suppliers – small-holder farmers who are insufficiently knowledgeable about modern farming techniques.

## 4. Addressing Engro's skills gaps

In striving to bridge the skills gaps just outlined and to secure the social license to operate, Engro has a number of initiatives at all three levels – within the company's own current and prospective workforce, with its suppliers and clients along the value chain, and within the local community (see Figure 2).<sup>14</sup>

### 4.1 Engro's workforce development: Training of current and future workers

Recognizing that its employees are the key to company success, Engro has made a priority of skills development – both within its workforce and among the local population, where requisite skills have been in short supply.

#### Systematic assessment and development of skills

The company has been a pioneer in many fields – to take one example, power generation from permeate – and it is one of the few fertilizer companies in the country. On both counts, skills have had to be developed internally. That is particularly true for management positions: the managerial staff need to have a deep understanding of the company's business and to share its strong values and company culture. Senior executives are convinced that for the company to grow, it is crucial that the managerial staff and other employees should enhance their skills.

Accordingly, Engro invests heavily in training courses and general workforce development. Based on differentiated competency profiles, the training needs of every employee are analyzed and a training calendar is designed, with respect to both hard and soft skills. The technical training is mostly done in-house, while the soft skills – and especially leadership development for top

Figure 2: Overview of Engro's initiatives to bridge its skills gaps

	Type of initiative	Initiative	Main purpose
A	Workforce development	A.1 PCESSDC technical training college (TTC)	Foster skills development, and enable hiring of local diploma-holders
		A.2 Systematic assessment and development of skills	Promote internal career development
B	Value-chain development	B.1 Skills development of farmers	Improve the productivity of farmers
		B.2 Women empowerment through livestock development (WELD)	Train women to provide advisory services to dairy farmers, to increase their productivity
C	Community development	C.1 Education for local communities	Foster local education, to secure the social license to operate

talents – are refined and developed with outside help. Engro cooperates with established partners such as Dale Carnegie or Aon Hewitt, which have devised specific programs for Engro. In addition, Engro sends executives to world-class business schools like Harvard or INSEAD for leadership training courses.

#### **PCESSDC technical training college: Training to recruit workers locally**

Owing to the lack of properly trained technicians and other professionals, Engro used to hire very few people from the local community other than unskilled workers, such as drivers, house-keepers, and guards. The district has a high unemployment rate, and few prospects for its many young people, so Engro's practice of hiring people from other regions of Pakistan was the subject of increasing criticism from the population and media. That prompted Engro, together with other petro-chemical companies, to form a non-profit Public-Private Partnership (PPP) in 2009 to address the problem – the Pakistan Chemical and Energy Sector Skills Development Company (PCESSDC). Its aim is to provide education and training to the young and growing rural population to equip them for work in Pakistan's petro-chemical sector. A technical training college (TTC) was set up in Daharki that offers a three-year diploma in chemical and mechanical engineering to 60 students per year. The training on offer is gradually being extended to include instrumentation, electrical engineering, and computer science, and capacity is being increased to 120 students per year. Admission to the program is purely on merit, which is determined by entrance exams. To prepare applicants for the exams, private tuition institutes have opened in the area, and Engro offers coaching to the youth of the villages in the immediate vicinity to its fertilizer plant. The courses include many practical sessions, which are conducted in a well-equipped laboratory or workshop; they also involve an internship at Engro or one of the other partner companies. Moreover, Engro engineers and staff, including senior executives such as the Director of Manufacturing, visit the college to talk about their work and careers and to provide coaching. No other TTC in the country has a comparably close connection to industry. It is not enough, however, simply to complete the program: the graduates still have to apply for posts and pass further entrance exams in order to work for Engro or one of the other companies. The recruiting quotas of these companies reflect their respective shares of the PCESSDC. Finally, in addition to the diploma courses, the TTC is now offering six-month vocational training courses in welding, carpentry, pipe fitting and other technical trades, in cooperation with the Sindh Technical Education and Vocational Training Authority.

#### **4.2 Skills development along the value chain: Improving productivity among suppliers and customers**

The agricultural sector in Pakistan suffers from low productivity and high resource usage, owing to the lack of modern farming and resource-conservation techniques. Engro supplies fertilizers

to farmers (indirectly through distributors) and buys milk and rice from them, so its business is closely intertwined with them, and the company has accordingly invested heavily in developing their skills.

#### **Skills development of rural farmers: Raising productivity and developing business**

Through its rice and fertilizer business, Engro is involved in the production of staple food. Given the farming sector's low level of productivity, Engro, together with the German development agency GIZ, has implemented the so-called System Productivity Innovative Rice Trainings (SPIRIT) to improve yields and reduce the usage of water as well as other resources. From December 2013 to July 2015, Engro's agricultural experts and trainers provided on-site training courses and demonstrations to farmers and agri-farm support personnel, instructing them in modern farming techniques, such as alternate wetting and drying, optimal plant population, and fertilizer management. Building on the success of the SPIRIT program, a fertilizer outreach program is planned to train farmers specifically on the best fertilizer practices – for instance, combining different types of fertilizers to ensure balanced nutrition and soil sustainability.



Trained rice farmer in rice field

#### **Empowerment of women through livestock development: Improving productivity and women's lives**

Engro Foods works together with just over 2,000 milk collection centers, which collect milk from thousands of small traditional farms that typically have less than ten animals. At these family farms, women play an important role in the daily care and management of the animals, while the male household members are primarily responsible for selling the milk. These farms are characterized by low milk yields, and lack of inputs and capital. Engro, together with the United States Agency for International Development (USAID), has duly implemented a training program for small dairy farmers (targeting women especially) to improve livestock-care practices, and for local women to work as milk collectors or as livestock extension workers (providing basic extension services to local farmers such as vaccination or treatment of basic ailments). This Empowerment through Livestock Development (WELD) project is in the spirit of Engro's HR

gender-equality strategy, improving the situation of the self-employed female milk collectors. The project was successfully completed in July 2014, and it will now be extended – both to support women-led micro-enterprises offering extension services to farmers, and to establish and train farmer groups.



Training of female farmers

#### 4.3 Closing skills gaps in the broader community: Securing the social license to operate

Despite living close to a petro-chemical industry cluster with 14 large companies, the population around Engro Fertilizers' Daharki production site is still mainly rural and has low levels of education. A particular concern of the company is that the fertilizer production process involves hazardous materials that could potentially cause considerable damage to the surrounding villages. In addition to it being a key means of living up to its corporate social responsibility aims, Engro views education for the local communities as a key lever to secure the social license to operate. Accordingly, the group invests heavily in local schools (mostly primary schools and middle schools but also high schools) and the education of teachers: it does so through the Engro Foundation, which pools its corporate citizenship activities. Faced with the low quality of the public education system, Engro does more than simply provide funding; it "adopts" schools from the government, by developing and renewing the schools' infrastructure, providing free teaching materials, managing the operational affairs, monitoring attendance and dropouts, and recording learning progress, as well as encouraging enrollment among the local population. As for the training of teachers, Engro – mindful of the vital role that teachers play in improving education in Pakistan – sponsors a Training and Resource Center, which was the first teacher-training facility in the Ghotki District.

#### 5. The role of DFIs: Constant dialogue to identify opportunities for maximizing the impact on business and society

DEG has supported the expansion of Engro by providing financing – both for the modernization of the fertilizer production facility, and for Engro's Quadripur power plant, which utilizes permeate gas that used to be flared in the gas fields. These financing projects clearly impact very positively on Pakistan's agricultural economy and energy supply. In addition, DEG and Engro are constantly working together, with a deliberate development perspective, to identify projects that will improve the lives of the local population. In this regard, DEG supported the TTC by financing a modern mechanical lab – a resource that differentiates the TTC from other colleges and gives its students a competitive edge. Moreover, DEG supports financially the continuation and extension of the WELD project, in its efforts to establish women-led micro-enterprises and to set up and train farmer groups.

#### 6. The costs and benefits of Engro's engagement

Accounting data produce a well-documented picture of the costs of Engro's skills-development initiatives. The benefits, in contrast, are difficult to identify and to quantify, as they accrue on different levels – for the company itself, for employees, along the value chain, and for the local community. Figure 3 summarizes the costs and benefits of the different initiatives at each level.

##### 6.1 Costs and benefits of Engro's workforce development

###### Company costs and benefits: Improving productivity and securing the social license to operate

Engro has contributed about USD 677,000 to the establishing of the PCESSDC since 2009, and incurred indirect costs of USD 294,000 for planning, coordinating, and lobbying for the program. On average, that amounts to costs of USD 162,000 per year for the years from 2009 to 2014, when the first intake of students graduated from the program.

In return, Engro benefits from the TTC in various ways: Of the first batch to graduate – 49 in total – 21 graduates joined Engro in the summer of 2014, and in future the company plans to hire about 50% of the new graduates each year. As evidence of the high quality of the TTC and the demand for trained locals, there is fierce competition among employers for the graduates. For Engro – which needs to recruit about 75 additional diploma-holders each year – the TTC enables an increase in local sourcing

Figure 3: Overview of the costs and beneficiaries of Engro’s engagement

Type of initiative	Initiative	Costs ('000 USD)	Beneficiaries			
			Engro	Employees	Suppliers	Community
A <i>Workforce development</i>	A.1 PCESSDC technical training college (TTC)	One-off: 971 Running: 162 p.a.	+++	+		++
	A.2 Systematic assessment and development of skills	Running: 773 p.a. (Engro Fertilizers)	++	+++		+
B <i>Value-chain development</i>	B.1 Skills development of farmers	One-off: 186	++	+	+++	+++
	B.2 Women empowerment through livestock development (WELD)	One-off: 446	++	+	+++	++
C <i>Community development</i>	C.1 Education for local communities	Running: 521 p.a.	++			+++

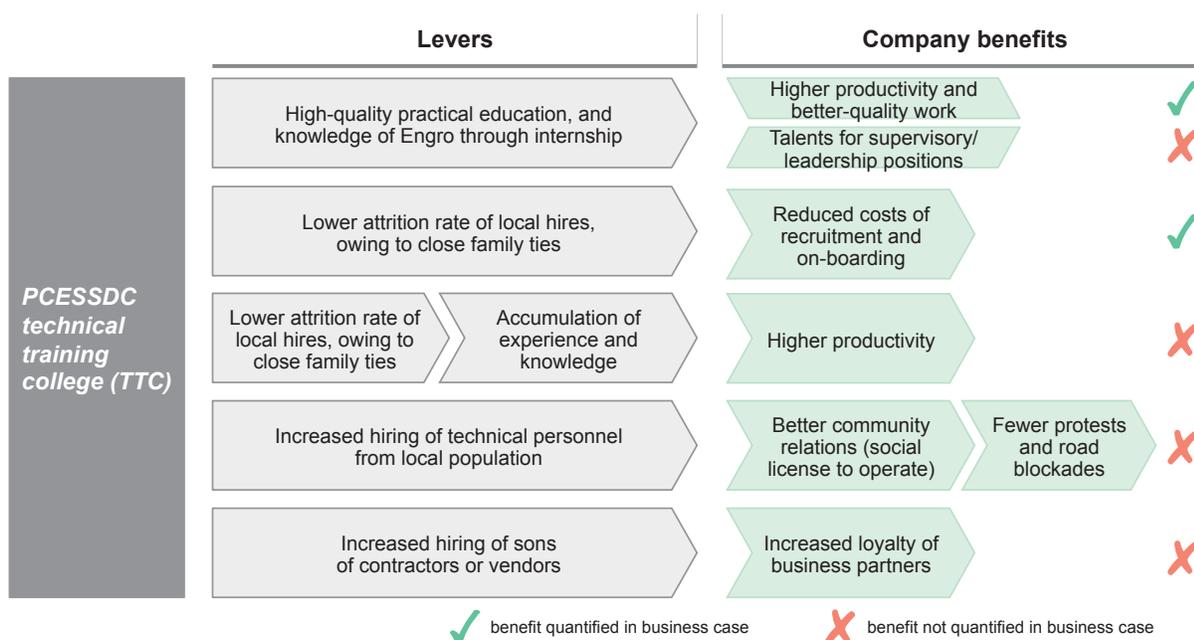
+ Small benefits   ++ Medium benefits   +++ Large benefits

of recruits, and that leads to four main benefits: better-qualified staff, reduced recruitment needs thanks to a lower attrition rate, stronger community relations, and improved relations with contractors and vendors (see Figure 4).

Graduates of the TTC are better qualified than candidates from other schools, since the program contains more practical elements, and the graduates already know Engro, thanks to the integrated internship. From the results of Engro’s standardized entry tests and interviews, it emerges that those hired from the TTC had on average a 27% higher test score and an 8% higher interview rating than those hired from the National Technical Schools. Given that Engro Fertilizers’ production involves haz-

ardous (explosive) materials, all newly hired diploma-holders – irrespective of prior knowledge or test scores – have to undergo a two-year internal trade apprenticeship, involving classroom and on-the-job training in the company’s strict security regulations, the production processes, and the techniques for their specific position. So there is actually a two-year time lag before the TTC graduates’ better qualification begins to reveal its positive impact on production. The TTC graduates have the potential to climb the career ladder within Engro and eventually become supervisors. They are expected to have a lower attrition rate than diploma-holders from other regions, as they are deeply rooted in the Daharki vicinity with their families and friends. A lower attrition rate will reduce the substantial costs

Figure 4: Logical chain of effects that the PCESSDC TTC produces for Engro



involved in recruiting and on-boarding (via the two-year trade apprenticeship for new hires); and it should also lead to increased workforce productivity, as employees tend to be more productive if they stay longer with the company.

As described in Figure 4, the benefits stemming from the superior quality and lower attrition rate of new hires are typical effects that could be quantified. Since the first graduates joined Engro only last year, quantitative information is not available yet, and a full-fledged NPV is therefore not possible. It is possible to offer a break-even simulation, however. Based on the costs of the program and the impact levers identified above, the break-even simulation assesses the necessary change in the key variables – i.e. attrition level and productivity – at which the Cost-Benefit Appraisal becomes positive. The simulation is based on Engro’s (projected) costs for the program and the current average attrition rate and productivity level, as well as some other key inputs (see Figure 5). Engro expects its current annual costs (both direct and indirect) to increase by 10% each year. With an annual recruitment need of 75 graduates, it plans to hire 50% of the TTC graduates in mechanical and chemical engineering each year, i.e. 35 graduates, from 2016 onwards.

As the benefits take quite a long time to accrue, a dynamic break-even simulation is conducted over a 10- and 15-year time horizon, using discounted cash-flows. Three different scenarios are calculated (low, medium and high) for the two key variables

to show the sensitivity of the results (see Figure 6). The scenarios show variations in the attrition rate and productivity relative to other graduates hired by Engro. The overview shows that the higher productivity of TTC graduates has a greater impact on the results than a decrease in the attrition rate. For an attrition rate of 3.5% (in the high scenario), the increase in productivity needed for reaching break-even is 14.8% for a 10-year horizon and 8.7% for a 15-year horizon – figures that seem reasonably plausible, given the better interview results of the TTC students.

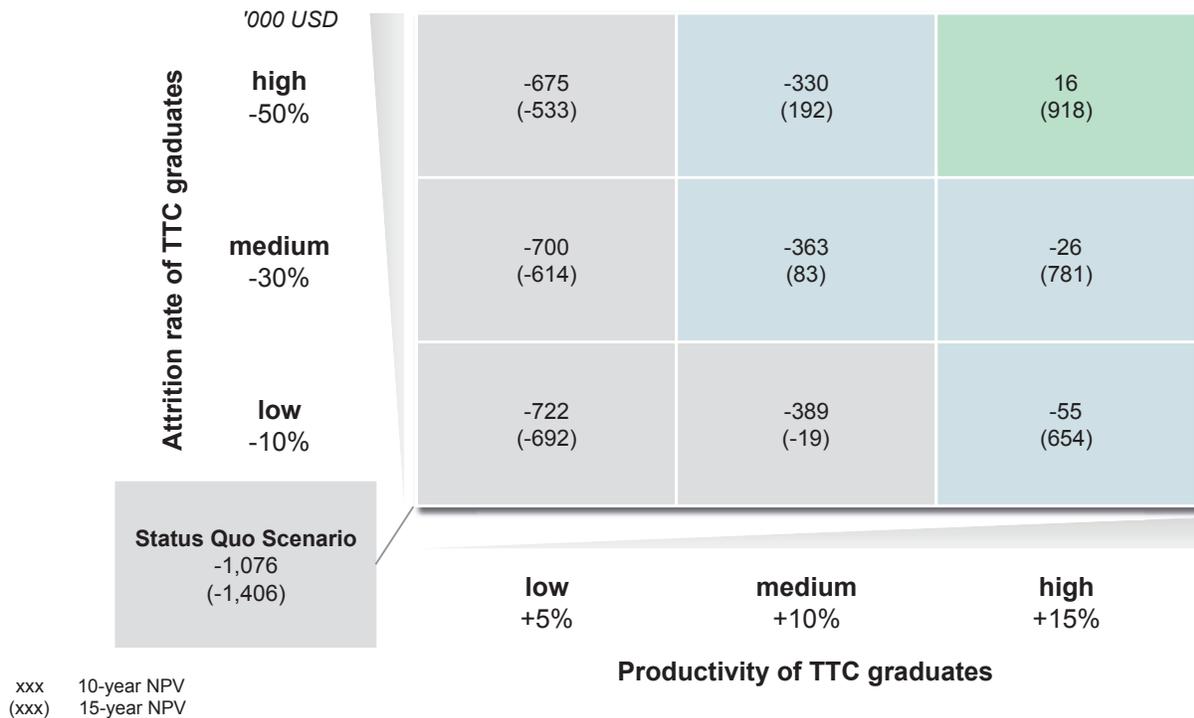
In addition to these quantifiable benefits, there are two other important benefits for Engro. First, the training and hiring of local youth serves as a response to the criticism expressed by the local population and media, and improves community relations, to the point of securing a social license to operate for the company. Such a social license is a critical advantage, given the sensitive nature of Engro’s fertilizer business. Anecdotal evidence suggests that the community relations have indeed improved: the company now experiences fewer protests or blockades of the road or factory gate due to these labor issues – disruptions that jeopardize the smooth functioning of the production process. Secondly, more than 40% of the students come from the families of Engro contractors or vendors, and that connection fosters their loyalty to Engro. With the range of benefits it generates, the TTC can certainly claim to have a significant positive impact on Engro.

Figure 5: Inputs for the break-even simulation

Costs ('000 USD)		Benefits	
Direct costs to Engro 2009-2014	677	Hired graduates of TTC (fixed number 2016 onwards)	2014: 21 2015: 33 2016: 35
Indirect costs to Engro 2009-2014 (staff time devoted to planning, coordination, lobbying, etc.)	294	Average attrition rate	7%
Projected increase in costs per year (without inflation)	10%	Training and on-boarding costs ('000 USD) – - two-year internal trade apprenticeship (TA) program	8
		Average value added per employee ('000 USD) <sup>1</sup>	97
		Productivity of students after internal TA program relative to average productivity	75%
		Time needed by hires from other programs to reach higher productivity of TTC students (after TA program)	3 years
Other assumptions			
Inflation rate	7%	Discount rate	12%

1. Calculated using BCG Workonomics approach: Value added per employee = (Revenues – Costs of sales (excl. personnel costs) – Depreciation)/# of employees.

Figure 6: Overview of different scenarios for the break-even simulation



The annual training spending at Engro Fertilizers is USD 773,000. By means of its systematic assessment and development of skills, the company is able to identify and develop talented staff for leadership positions and to promote them internally. Employees have a clear career perspective, and this increases their satisfaction: witness the high employee engagement index of 73% in 2014, and Engro’s rating as one of the top five employers in Pakistan in 2013. One further virtue: the company has a very low accident rate, thanks to the high security standards and the internal training in security issues.

**Employee benefits: Moving up the ranks internally**

Thanks to the systematic training in hard and soft skills, and Engro’s strategy of developing leadership personnel internally, the internal career prospects for employees are very good. And they can improve their salary considerably if they move up the ranks. Employee satisfaction is reflected in the high engagement rate and the popularity of Engro as employer.

**Community benefits: Improving employability locally**

For the community too, Engro’s workforce development, particularly the TTC, is highly beneficial.<sup>14</sup> The community benefits greatly from the improvements to the education and employability of local youth – enabling about 100 graduates each year

to work for the petro-chemical industry. Engro specifically supports the admission of local youths to the TTC – that is, children from the immediate vicinity of its plant – by offering coaching sessions in the villages of the so-called Community Awareness and Emergency Response (CAER) program. Of the 45 young trainees, ten (i.e. 22%) were admitted to the TTC. Against the backdrop of a 35% unemployment rate locally, the creation of well-paid jobs is a great boon to the local community. Other potential jobs for the students – bus driver, auto-mechanic, or other positions in services – typically offer them a starting salary of USD 1,200 per year. Engro offers them almost double – USD 2,200. Moreover, at Engro their annual salary can increase to more than USD 4,000 within five years. For a rough calculation, apply the initial salary difference to about 100 graduates per year, and the result is an additional household income of USD 100,000 for the community each year – with corresponding increases in local consumption and tax payments. Note too that the TTC itself – the construction of it and its ongoing operations – has created further local employment. For the local population, it also remedied a serious shortcoming in the provision of education: previously, there had been no training institute for the children graduating from Engro’s adopted schools. Of the 49 first-batch graduates of the TTC, four had attended Engro’s community schools – a showcase of the transformative effect that the company’s skills-development engagement is having on the people from the local community.

## 6.2 Costs and benefits of Engro's skills development along the value chain

### Costs and benefits for Engro: Increasing the quality of inputs and sales of fertilizers

Together with its partners, Engro invested about USD 186,000 in the SPIRIT program for training rice farmers in 2014, and USD 446,000 in the WELD program from 2011 to 2014 (the other 80% of WELD's USD 2.2m project costs was borne by USAID). Both programs have a clear bottom-line focus: their aim is to expand the production of rice and dairy products through increases in productivity and hence production volume, and also to improve quality (for instance, less contamination of milk). By training farmers in optimal fertilizer management and the application of different types of fertilizers, the SPIRIT program also has the effect of boosting the sale of fertilizers. In addition to these direct business impacts, Engro also benefits from the enhanced image and reputation conferred by some of the training courses – courses that combine value-chain development with corporate-citizenship activities. The success is further evidenced by the news that the WELD program is to be continued and extended, and that a new outreach program is currently being planned.

### Benefits for employees: Improving Pakistan's agricultural sector

The employees who are involved in Engro's value-chain development initiatives – as trainers and experts, for instance, or in the program management – are thereby helping to improve the lives of thousands of small-holder farmers, and contributing to the modernization of Pakistan's agricultural sector. They take pride in the work, and gain a considerable sense of satisfaction from doing something meaningful for a greater cause.

### Benefits for suppliers, clients, and the community: Improved livelihoods for thousands of farmers, and the empowerment of women

Suppliers and clients of Engro Foods and Engro Fertilizers consist of thousands of small-holder farmers producing milk and rice, so the benefits for suppliers and for the community are closely intertwined. The increase in production volume, made possible through the training, leads to a direct improvement in the living conditions of the suppliers' families. More than 10,000 rice farmers and 2,000 farm support workers have received training: the training in direct seeding substantially increased rice yields by about 14%, and the training in alternate wetting and drying techniques reduced water consumption by 20-35%. In addition, because of the WELD program, women are trained to work as village milk collectors and as livestock extension workers (advising local farmers and performing simple veterinary tasks). The benefits for these women and the community have been substantial.

For an assessment of the social impact of the training, the approach described in Chapter 3 will be used. First, a social-impact chain is drawn that connects Engro's inputs with the outputs and the social impact (see Figure 7).

To identify the impact, one begins by analysing the different impact levers that work either directly through the initiative or indirectly through the beneficiary (see Figure 8).

By training 538 women to work as extension workers and milk collectors, Engro created employment for those women. Previously, the women either had not had work or had been engaged only in smaller economic activities, such as embroidery, stitching, or tailoring (about 40% of participants). Generally, women are economically marginalized in rural Pakistan: 94% of the women

Figure 7: Social-impact chain for Engro's WELD program

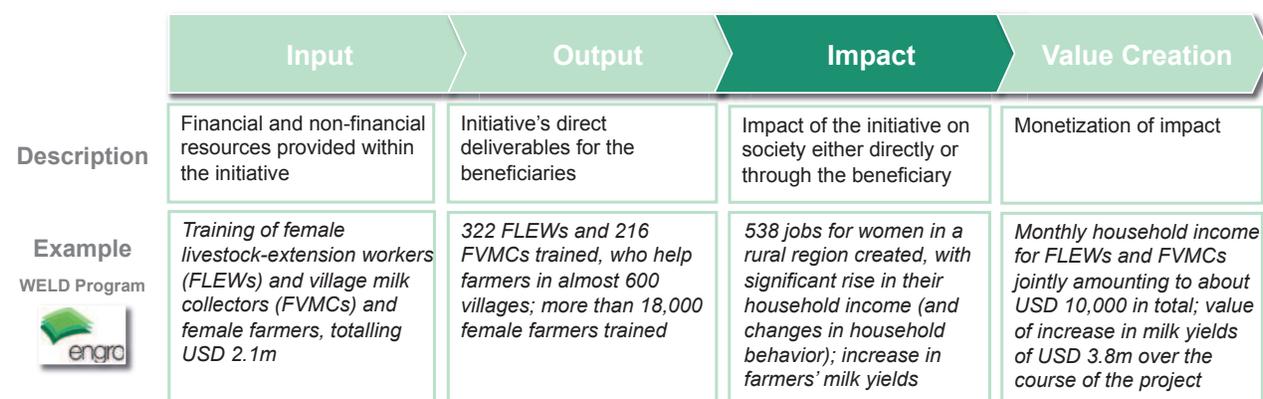
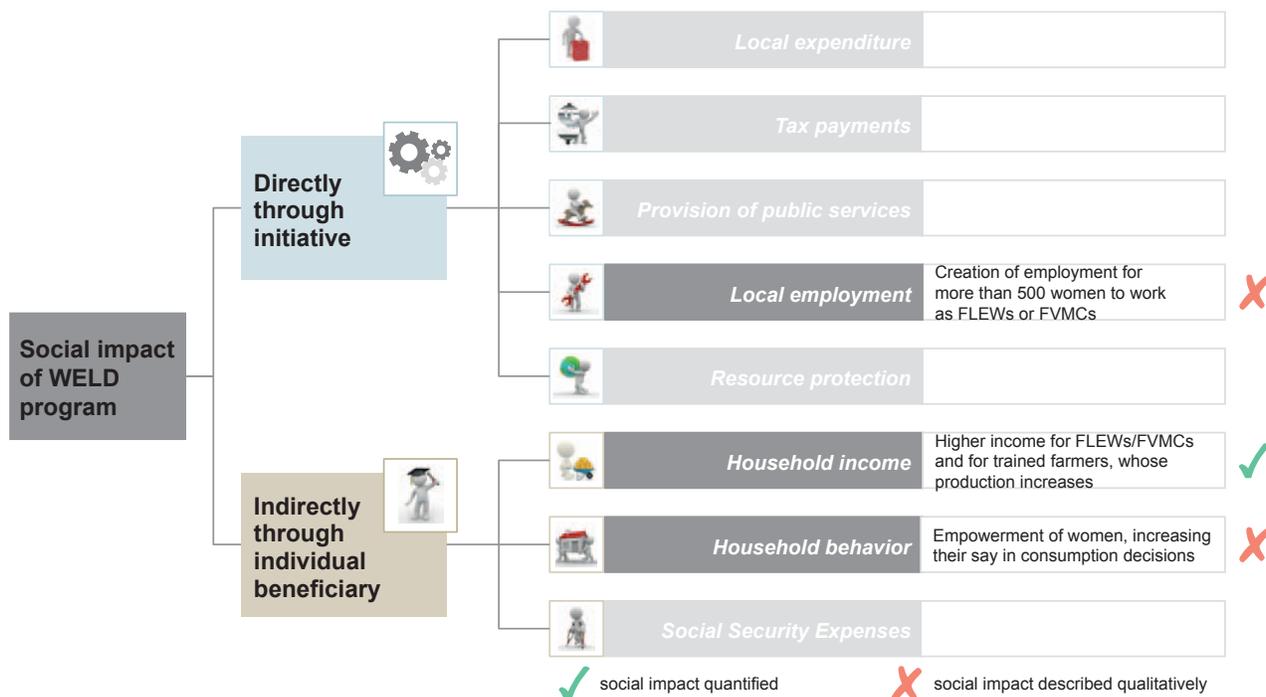


Figure 8: Social-impact levers of Engro's WELD program



in the Ghotki District stay at home, according to an Engro Foundation survey. The trained women can now offer their services to farmers in the villages, and thereby increase their family's income and improve their own position both within the family and in society. Traditionally, men sell the milk and engage in business activities, while the women work at home and are involved in caring for the cattle. The training of FVMCs and FLEWs has disrupted that traditional arrangement: not only do the trained women gain a higher status, but so too do the women in the farmers' families as they can now sell the milk to the FVMCs, and they receive advice and training from the FLEWs. More than 18,000 women have now been trained as farmers in this way. The empowerment of women has positive effects on household behavior, as women tend to spend more on education and health compared to men; and it is changing male attitudes regarding women working outside the home. The long-term impact is sure to be considerable. That said, it is very hard to quantify overall, and is therefore best assessed qualitatively (see the next section).

Nevertheless, some measure of social impact is quantifiable: the increase in household income of the FVMCs and FLEWs and also of the farmers' families (thanks to higher milk yields, resulting from improved animal health). The FLEWs have an average monthly income of USD 20 each, and the FVMCs USD 25 – compared to about USD 5 before the intervention. Accordingly, for the 538 women – 322 FLEWs and 216 FVMCs – the increase in their joint income amounts to about USD 10,000 per month. As for the rise in the income of farmers' families: daily milk

yields have increased on average from 3.6 to 4.9 litres per cow/animal, which means an increase of about USD 3.8 million (valued at the average milk price) in total to the family incomes of the 18,000 women trained in farming techniques over the project period.

### 6.3 Costs and benefits of Engro's closing skills gaps in the broader community

#### Company benefits and costs: Securing the social license to operate, and reducing security risks

Engro spent about USD 521,000 on its education activities in 2014. Such engagement has done much to improve relations with the local community, which have traditionally been difficult. If accidents were to happen at the production plant, the potential damage and negative effects on the vicinity would be serious, so the local population has tended to take a critical view of Engro, and protests have taken place from time to time. As the overall security situation in the region is generally worrying, Engro Fertilizers and other petro-chemical companies have had to invest heavily in the security of its facilities and employees. These precautions could be reduced somewhat if the local community felt more protective towards the company. The hope is that, through its skills-development program for the local children, Engro can secure the social license to operate, and can spend relatively less on security. Anecdotal evidence suggests

that the community relations have indeed improved: the company now experiences fewer protests or blockades of the road or factory gate – disruptions that jeopardize the smooth functioning of the production process.

**Community benefits: Improving the education and employability of local children**

For the poorly educated rural communities nearby, Engro’s community-development efforts provide great benefits by improving the quality of and access to education. The company not only provides financing, but effectively adopts government schools, and in that way achieves a sustainable improvement. Over the last five years, the number of adopted schools has increased from 25 to 33, and the number of students has risen from about 3,000 to over 4,500. Engro Fertilizers alone supports 22 schools around the plant’s location in Daharki, serving more than 2,500 pupils. Half of these schools are in the Katcha area, where the security situation has been very difficult, but where former delinquents have now been integrated into the schooling initiative, and are supporting the development of schools and urging community members to enroll their children. So Engro’s community development can claim not just to have created employment but also to have improved the security situation locally.

Through its various measures to close the skills gaps in its workforce, in the value chain, and in the community itself, Engro achieves a variety of benefits for the community. These benefits can be assessed qualitatively along the different social impact levers (see Figure 9). As discussed above, Engro’s initiatives have a large positive impact on society – particularly the initiatives relating to value chain and community development.

**6.4 Overall assessment of costs and benefits**

Figure 10 provides a summary assessment of the three main initiatives along three dimensions – benefits, cost-effectiveness and sustainability.<sup>15</sup> The size of the green triangle indicates the performance of an initiative along these dimensions: the larger the green triangle is, the better is the overall performance of the initiative. All three initiatives perform well along the benefits and sustainability dimension, but differ in their cost-effectiveness.

- **The technical training college** has large positive effects for Engro, enabling the company to hire local diploma-holders of very high quality and with lower attrition, and thereby helping

**Figure 9: Qualitative assessment of Engro’s initiatives along social-impact levers**

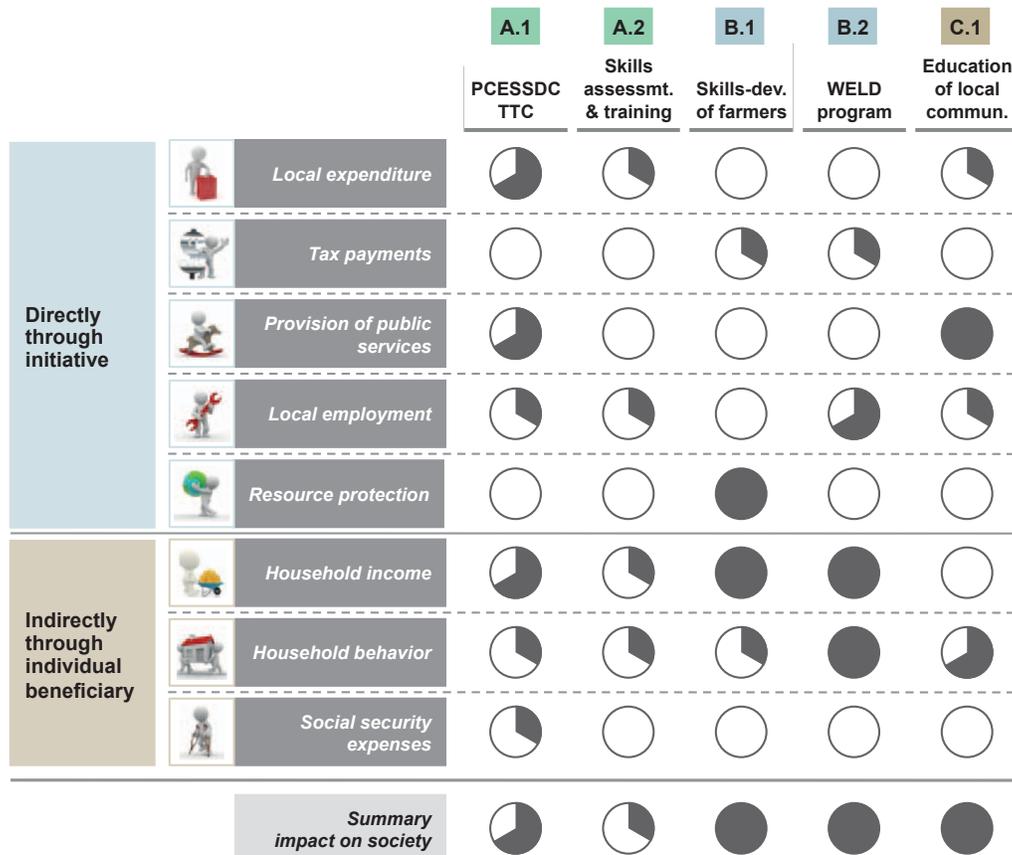
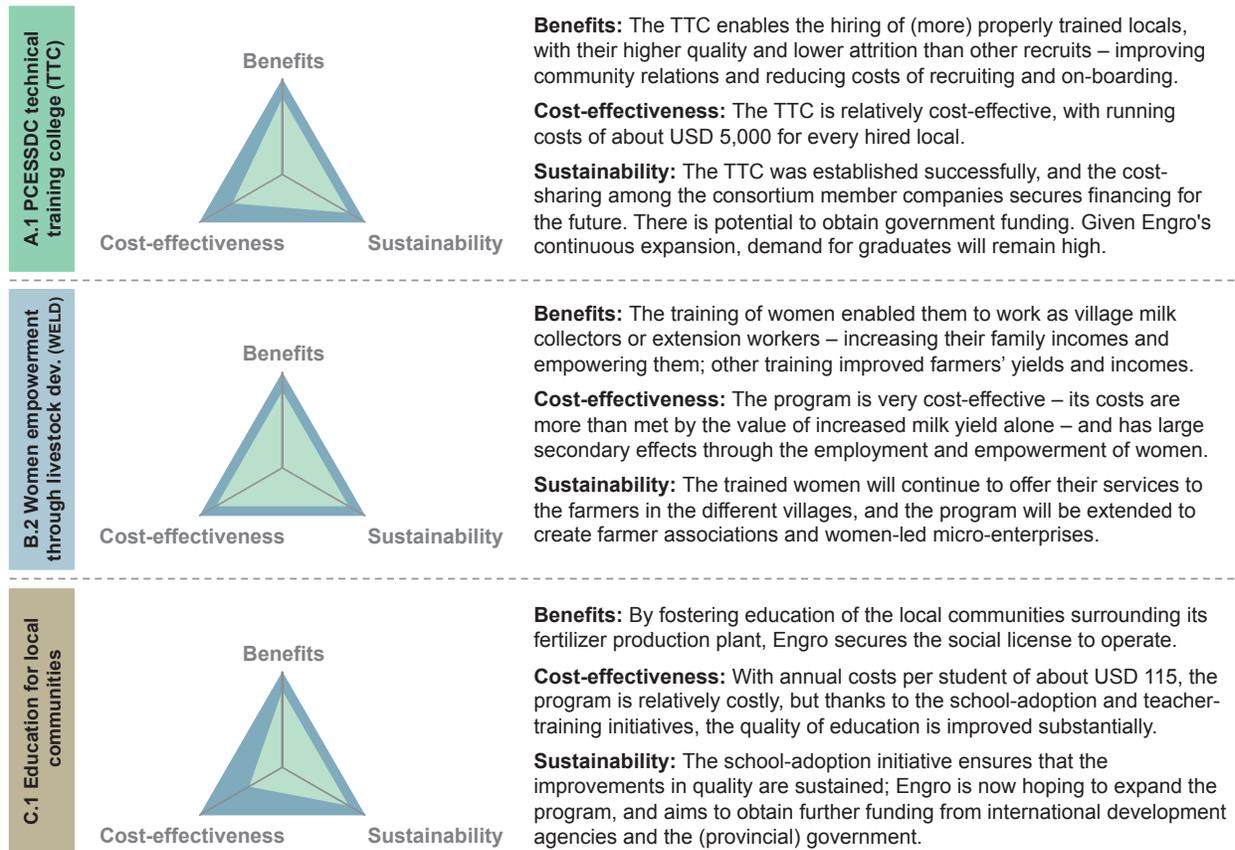


Figure 10: Summary assessment of selected initiatives



to improve community relations and reducing the substantial costs of recruiting and on-boarding. The program seems very sustainable, thanks to the cost-sharing among the various member companies and to the potential for obtaining government funding. Furthermore, demand for properly trained local staff is likely to remain high, owing to Engro's continuous expansion.

- **The Women Empowerment through livestock development (WELD)** program has large positive effects, transforming the lives of the trained female milk collectors and trained female extension workers, and greatly improving the lives of the trained female farmers by boosting their yields and hence incomes. The increase in milk yield alone more than pays off the investment of Engro and its partners, so the program is considered highly cost-effective. The trained women are now economically active, and will continue to offer their services to farmers, so the program can also be considered very sustainable. In addition, the program is to be extended by creating female-led micro-enterprises and farmer associations, which will increase the employment effect and facilitate future knowledge exchange.
- **Engro's education program for local communities** is highly beneficial for the company, in that it improves community relations and secures the social license to operate (espe-

cially for its highly sensitive fertilizer plant). For the community, Engro's engagement increases the quality of education considerably. The adoption of schools and the contribution to teacher training make the benefits sustainable. Engro is now in discussion with the provincial government, and with international development agencies like USAID, to secure additional funds. The program currently involves an annual investment of about USD 115 per student, which means that it is not particularly cost-effective; but cost-effectiveness is not the main focus of these activities, and Engro is truly transforming the education activities in the villages surrounding its facilities.

The analysis of the costs and benefits of Engro's measures to close the skills gaps can be summarized as follows: Engro invests heavily in the skills development of its (prospective) workforce, in the value chain, and in the community. The total one-off investment has been USD 1.6 million, and running costs USD 1.3 million – jointly amounting to far less than 1% of the group's 2014 revenues of USD 1.7 billion.<sup>15</sup> In return, Engro benefits from a very well-trained workforce, and is able to develop skills as well as leadership personnel internally. This is particularly important, as the company is constantly expanding – venturing into other geographies and sectors – and its personnel

require a firm understanding of the group’s values and core business. By supporting the TTC and local schools, Engro not only improves its ability to recruit highly qualified workers – workers who tend to stay with the company longer and potentially climb the career ladder – but also improves community relations by increasing the share of locals among its workforce. By engaging in skills-development projects for its suppliers of rice and milk (who are also clients for its fertilizer business), Engro enhances their productivity and the quality of their products, and at the same time fosters the sales of its own fertilizers. For the local communities, there is a substantial social impact – especially for women – as the initiatives improve the livelihoods of thousands of small-holder farmers and provide employment for more than 500 trained women. The empowerment of women is transformative for the lives of the women themselves and for the patriarchal Pakistani society as a whole. As for Engro’s program of providing high-quality education for the villages surrounding its production facilities, this engagement has large positive effects on the communities, and boosts the life prospects of the children being educated. From Engro’s own perspective, its education activities improve community relations and secure the social license to operate.

## 7. Conclusion

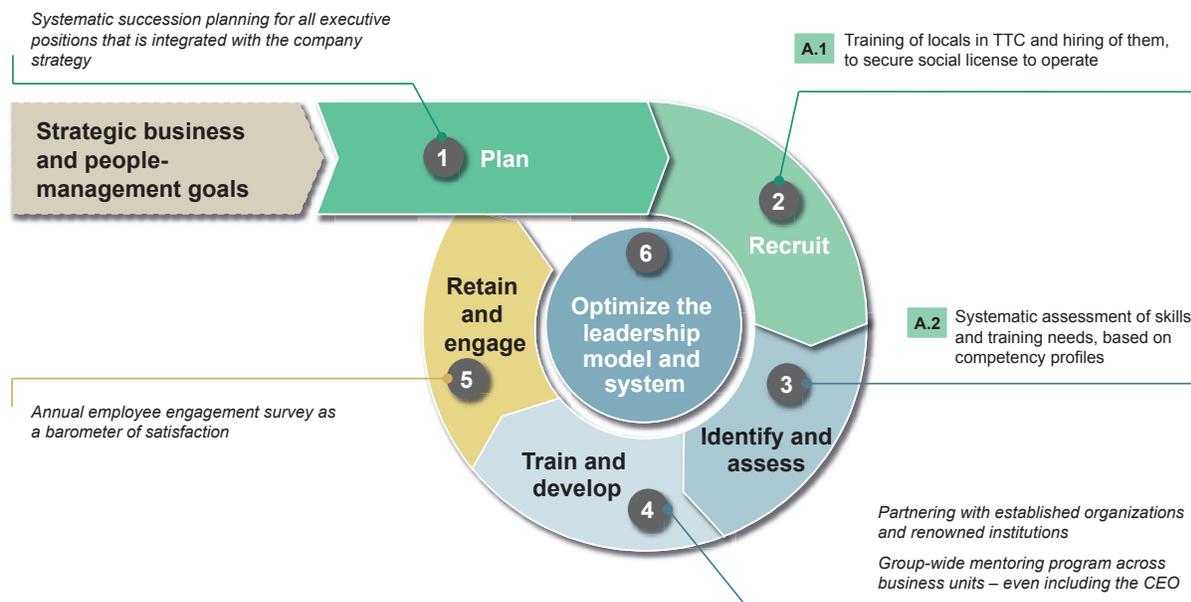
Engro’s skills-development initiatives aim mainly at addressing the skills gaps among the local workforce and among its suppliers. The CBA of the initiatives revealed substantial benefits for Engro and for the local community.

### Good practices from Engro that can help companies to close their skills gaps

From studying Engro’s initiatives and activities, it is possible to identify a number of good practices for workforce development. Figure 11 presents an overview of these practices along the HR value chain – including those relating to the topics of recruiting and retaining employees.

Among these good practices it is worth highlighting four elements that other companies could replicate or adapt to their specific needs and context:<sup>16</sup>

Figure 11: Overview of good practices from Engro’s workforce development



Note: Measures that are printed in italics are not described in detail in this case study.

1. **Systematic succession planning, taking into account the company's strategy.** Engro has a seven-step framework for CEO succession planning that maps the current leadership pipeline against the three- to five-year strategy. Through talent identification and specific training courses, the company ensures that more than three successors are available for each management position (good practice 1.3 in the good-practice framework for workforce development described in Chapter 2.1).
2. **Conducting an employee engagement survey as a barometer for employee satisfaction.** Each year, Engro conducts an engagement survey among its employees to assess their level of satisfaction. Employee engagement is a central objective and KPI of the company's HR strategy (good practice 5.3).
3. **A group-wide mentoring system to develop the next generation of leaders.** Engro has a group-wide mentoring system for all top talents across its business units. The mentoring is centrally administered through the group's HR department. Mentors include the CEO and other directors, who provide coaching to talented prospective leaders. By spanning the different business units, the mentoring system fosters the development of a group-wide network and reduces silo-thinking (good practice 5.5).
4. **Partnering with established partners and renowned institutions.** For its internal development of skills and talents, Engro cooperates with renowned organizations like Dale Carnegie or the company Aon Hewitt – organizations that have a confirmed track-record in HR development, and ensure that Engro's activities incorporate state-of-the-art knowledge and proven concepts (good practice 4.3).

#### Specific factors for improving the business case

The CBA of Engro's TTC showed that the program is clearly beneficial to Engro, thanks to the expected higher productivity and lower attrition rate of the TTC graduates as well as the non-financial benefits. To further improve the business case, it is worth considering two actions.

1. **Tailor the curriculum to Engro's needs (and to those of the other companies).** Although TTC students receive a very practical education, they still have to undergo two years of apprenticeship training at Engro. By including even more practical elements (such as another internship) into the curriculum, it would be possible for new hires to begin work while already familiar with the machinery and processes at Engro (or other companies). In that way, the two-year apprenticeship could be shortened, and the on-boarding costs could be considerably reduced (good practice 4.4).

2. **Leverage the graduates' special qualities.** Through having close family ties in the area, TTC graduates are less likely to quit the company for work abroad. Engro is likely to remain their center of reference and interest, so they tend to be focused and keen to accumulate experience. To those of particularly high quality, it is worth offering a fast-track career path as soon as they join the company (good practice 4.6).

#### Lessons learned from Engro

From the analysis of Engro's activities, it is possible to derive lessons learned that might help other companies to address their own skills gaps more successfully:

- **Talented graduates should have the prospect of a fast-track career.** To fully leverage talent and to provide additional incentives for top-performing students, consider introducing a structured fast-track career path. Combined with a mentoring program and with dedicated training plans, a fast-track scheme would enable outstanding graduates to move quickly into managerial positions (good practice 4.6 in the good-practice framework for workforce development described in Chapter 2.1).
- **Transparency of available and required competencies is crucial for talent development.** It is important to understand fully and explain clearly the required competencies for different positions and levels (competency profiles), and to assess employees' performance against these competencies. In that way, companies can identify gaps and make training plans accordingly (3.1).
- **Leveraging employees in supplier- and community-development activities helps to increase employee satisfaction.** If a company integrates its employees into its skills-development initiatives as trainers, it can imbue the employees with a feeling of pride and purpose, and thereby boost their engagement and loyalty. At Engro, these activities have become an integral part of the general company culture, which stresses that employees should contribute to improving the lives of the population at large – "Together we will change the world" (good practice 2.3 in the good-practice framework for closing skills gaps in the broader community described in Chapter 2.3).
- **Seek and make use of public funds for large-scale skills-development programs.** Engro is a showcase example of a private-sector company that involves public development institutions, such as GIZ and USAID, in planning, implementing, and thereby boosting the impact of skills-related activities in the value chain. Companies – and even Engro, could go further, and tap such organizations not just for their funding but also for their expertise, especially on large-scale or very ambitious skills-development projects.

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## Notes

- <sup>1</sup> Engro will be used to refer to the holding itself and to group-wide activities. When the different business units are under discussion, their specific names will be cited.
- <sup>2</sup> Information provided by Engro. If no specific reference is given, information in this case study is based on information provided by Engro and/or based on expert (phone) interviews in July and August 2015.
- <sup>3</sup> The following exchange rates are used: 1 USD = 102.01 PKR.
- <sup>4</sup> The Express Tribune (2012): The growth of the “billion dollar club” in Pakistan. <http://tribune.com.pk/story/483287/corporate-revenues-the-growth-of-the-billion-dollar-club-in-pakistan/>
- <sup>5</sup> The World Bank: Secondary school enrollment. <http://data.worldbank.org/indicator/SE.SEC.ENRR/countries/PK?display=graph>
- <sup>6</sup> The World Bank: Tertiary school enrollment. <http://data.worldbank.org/indicator/SE.TER.ENRR/countries/PK?display=graph>.
- <sup>7</sup> United Nations Educational, Scientific and Cultural Organization (2012): National Roundtable on Technical and Vocational Education and Training, Concept paper and Government of Sindh, Karachi (2013): Sindh Employment Trends 2013 skills.
- <sup>8</sup> Government of Sindh, Karachi (2013): Sindh Employment Trends 2013 skills.
- <sup>9</sup> “These provincial averages, however, mask considerable variations within the urban-rural sectors in the province; nearly 56 percent of the rural labour force has no formal education and/or education less than one year, while the corresponding figure for the urban sector is much less at 20.6 percent.”
- <sup>10</sup> Ibid. In Pakistan, the national standard for working age population is 10 years and above.
- <sup>11</sup> Ibid.
- <sup>12</sup> Care International in Pakistan (2015): Enhancing Socioeconomic Development through Investing in Human Capital in Punjab and Sindh.
- <sup>13</sup> Engro has very different business areas, requiring different kinds of skills and professionals, so the internal skills-gap assessment was conducted on just one of them – Engro Fertilizers. However, the general results are also valid for all other businesses within Engro.
- <sup>14</sup> The initiatives listed here represent just a selection of highlights from the Engro group, especially those of Engro Fertilizers. To discuss all the initiatives of the different business units would clearly be beyond the scope of this case study.
- <sup>15</sup> The following discussion applies the techniques for assessing social impact presented in Chapter 3.
- <sup>16</sup> The other good practices were described in detail in the sections above.