

# Climate Change Mitigation and Adaptation Strategies in the Garments and Textile Industries: An Analysis in terms of Firms, Suppliers, other Stakeholders Engagement in Europe and Bangladesh

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**\*Corresponding author:** Tania Akter, Senior Lecturer, BRAC Business School, BRAC University, Bangladesh

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**Tania Akter\***

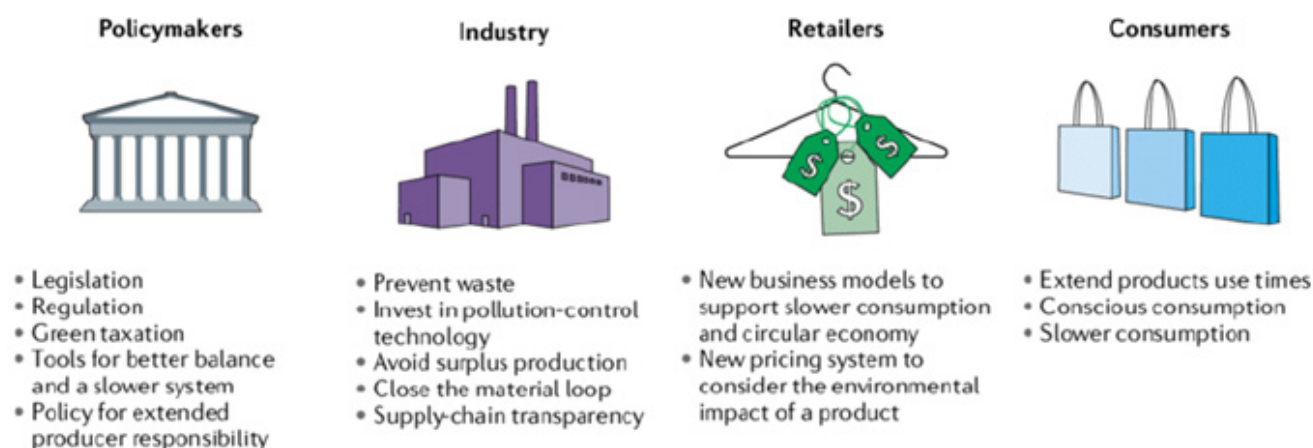
Senior Lecturer, BRAC Business School, BRAC University, Bangladesh

## Opinion

The garment and textile industries are responsible for creating around 10% of global CO<sub>2</sub> emissions and second most polluting supply chain responsible for around 20% of the total industrial water pollution according to an estimate of World Bank [1]. During the pandemic the global supply chain of garment industry suffered interruption and Bangladesh and other developing countries suffered huge losses as cancelling orders, stopped production which resulted to losing job for garments workers and other people related to this industry [2].

Fast fashion itself consumes a great amount of water in production and other processing stages [3]. In this stage emphasis is placed on slow fashion to make sustainable supply chain and the introduction of circular business models. The circular economy business (CE) model is defined as an efficient industrial system of restorative and regenerative in terms of sustainable design, zero waste design, product life extension, resource recovery, uses and reuses natural capital and generating value throughout products' life cycles [4-6]. Moreover, circular business model identifies the whole supply chain or value chain as holistic approach of engagement of all the actors in terms of production, consumption and return of resources to realize the 3R (reduce, reuse, recycle) principles [7].

The recent development of COVID 19 has made a significant interruption in the global value chain (GVCs) which is a standard process for last three decades for agriculture and industrial organization [8,9]. According to the Economist [10] climate change 2 and COVID 19 creates global development challenge where it requires all the countries responses. Increased amount of (fast) fashion production and consumption resulted into increased textile waste creating hazardous situation for the environment resulting into more carbon emission and climate change impact. As a result, there is increasing importance given to lower fast fashion production and enhance slow fashion goods where circular economy model is proposed. The following figure shows the actors engagement in the current crisis of climate change and COVID 19 where emphasis is placed more on zero or reduced textile waste (Figure 1) but there is a gap of exploring the following model application in terms actors' engagement and if there are any economic/social or legal barriers the actors are facing. In addition, the level of carbon emission the actors are responsible in their stages of involvement in the GVC according to the Greenhouse Gas Protocol. Hence, bear the significance of conducting this research both at Europe and in Bangladesh. Therefore, I completely agree on the existing literature and necessity to do further research to reduce the impact of climate change.



**Figure 1:** Stakeholders and actions for a more sustainable fashion industry. Recommendations for policymakers, industry, retailers and consumers to create a more environmentally friendly fashion business model.

Climate change is a global phenomenon creating severe impact in the earth. The heavy industries and manufacturing process pollutes the environment by industrial waste and polluting the air, which at last enhancing global warming due to increased carbon emission and responsible for climate change.

The World Health Organization (WHO) [11] declared global pandemic due to the spread of virus and termed it as coronavirus disease 2019 (COVID-19). The COVID-19 has infected more than 200 countries and territories in the world. This uneven spread has affected business and commerce all over the world and the overall GDP loss estimated to be up to couple of trillions of dollars [12]. Bangladesh is no different and is emerged on this scenario. Readymade garments (RMG) industry has been facing massive challenges, since many buyers have canceled bulk volume of orders due to unexpected spread and consequences of COVID-19. Moreover, MiB report (Mapped in Bangladesh) has reported closing of 198 RMG factories while another 286 factories temporarily closed providing unpaid leave to the workers [13] and making 894,930 workers unemployed (ADB) during the pandemic. Therefore, I think there is a necessity of empirical investigation for exploring the strategies.

It can be mentioned, based on above information, there is enormous necessity of conducting empirical research on the lead firms and suppliers' adoption of climate change mitigation and adaptation both in Europe and Bangladesh. The existing literature focuses on necessity of lead firms and suppliers upgrading to sustainable production, processes GVC where it is challenging, and different economic barriers exists [14] but there is no empirical evidence or literature on the lead firms and suppliers' adoption of climate change mitigation and adaptation both in Europe and Bangladesh. In addition, there is discussion of Zero waste management of textile and clothing industry for transferring to circular business model starting from product design and development, production and consumption, but this is insufficient

in terms of the actor's engagement of climate change mitigation and adaptation specially after COVID 19 [15-17].

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