Arvind Limited
Biodiversity Strategy

Introduction:

Biodiversity & the associated array of ecosystem services are crucial to the functioning and resilience of Arvind's operations. To mitigate the biodiversity related risks & leverage the opportunities, we seek to extend our biodiversity related engagements beyond precautionary approach to creating regenerative opportunities for a thriving a future, which supports a creation of net positive impact across the value chain.

This strategy document is an extension of our Biodiversity policy. It builds on our commitment to avoid operational activities near sites containing globally or nationally important biodiversity areas and the application of mitigation hierarchy when operating in areas in close proximity to critical biodiversity. It portrays our conscious effort towards integration of biodiversity related risks & opportunities in our strategic business decision making. The scope of this document primarily encompasses our manufacturing and sourcing operations.

Our Guiding Principles for Biodiversity:

For driving effective governance mechanism, monitoring nature-related risks & opportunities, and integrating biodiversity in Arvind's businesses strategy we have established the following guiding principles:

Identification of business-biodiversity nexus for Arvind

Biodiversity is a complex and multidimensional landscape, its interaction varies across each part of the textile value chain. Globally, there are five main direct pressures that constitute major threats to biodiversity. These five pressures are interconnected and act in a synergistic manner (Aiama, Carbone, Cator, & Challender, 2016). They also align with the high-level target categories of Science Based Targets for Nature (SBTN). The threats are listed below:

S. No.	Pressures on Biodiversity	SBTN Impact Categories
P1	Loss, Degradation and Fragmentation of Habitat	Use Change
P2	Overexploitation of Biological Resource	Resource Exploitation
P3	Excessive Nutrient Loads (especially nitrogen & phosphorous) & other forms of Pollution	Pollution
P4	Climate Change including Acidification of Oceans	Climate Change
P5	Invasive Alien Species impacts on Ecosystems	Invasive Species & Others

For Arvind to support and actively contribute to the conservation and sustainable use of biodiversity it is important to fully understand how our activities impact and depend upon biodiversity.

Understanding the impact & dependencies

The table below provides a description of the impact and dependencies of the value chain stages on the five direct pressures to biodiversity:

Value chain	Direct Pressures on Biodiversity				
	P1: Loss, Degradation and Fragmentation of Habitat	P2: Overexploitation of Biological Resource	P3: Excessive Nutrient Loads (especially nitrogen & phosphorous) & other forms of Pollution	P4: Climate Change including Acidification of Oceans	P5: Invasive Alien Species impacts on Ecosystems
Raw material for natural fibre (sourced from farmed crops) Main material used: Cotton Other sources of material used: flax, hemp	Cotton: Area expansion could result in the loss, degradation and fragmentation of natural habitats. Expansion of cotton production can also negatively impact food security, particularly where it may compete with food crops in food insecure regions - but as a cash crop it can also create additional income for farmers. Flax and Hemp: Represent a small proportion of both fibre and global cropland and typically use far less water compared to cotton, so generally has limited direct impacts on habitats compared to cotton (SEI 2005; NRDC 2011).	Not applicable for farmed crops	Cotton: Cotton is typically a chemically intensive crop and grown using fertilizers, herbicides and pesticides. In spite of occupying 2.4% of global cropland, cotton accounts for 22.5% of the world's insecticides and 10% of all pesticide use (WWF 2015). Flax and Hemp: They use fewer chemicals compared to cotton, and cultivation occupies less land area globally, so limited pollution impacts in general (SEI 2005; NRDC 2011).	Sources of GHG emissions include: fossil fuels used in the production and use of agrochemicals for farming, the distribution of raw materials, and land use change from expansion of land for cultivation. Limited climate change impacts in terms of GHG emissions, compared to other more energy-intensive parts of the value chain.	Cotton, linen and hemp are not considered invasive alien species as per the Global Invasive Species Database (GISD 2015) which focuses on species that threaten native biodiversity and natural ecosystems.
Raw material for natural fibre (sourced from trees): Viscose, Bamboo	Trees from both natural and plantation forests (for example, Eucalyptus, Bamboo) to produce 'dissolving pulp' to produce rayon fabrics such as tencel, viscose, modal, and cupro. Increase in demand of dissolving pulp could result in loss, degradation and fragmentation of habitat	Overexploitation of a particular species is unknown, but if endangered forests are being converted, some globally threatened species could well be negatively impacted.	Plantation forests can utilise agrochemicals which can pollute waterways and soil if unsustainably managed. Pulp mills can discharge many pollutants in surrounding water bodies including persistent toxic chlorine compounds like dioxin, organic materials that consume oxygen during decomposition, sulphur dioxide that contributes to lake	Loss of forests, particularly old growth forests, can result in significant GHG emissions. Also, the manufacturing of man-made cellulosic fibres also releases GHG emission.	Dissolving pulp can be sourced from plantations which are often based on Eucalyptus (several species are used for commercial purposes and are known to be invasive species that negatively impact local wildlife).

			acidification, air-polluting nitrogenous compounds and phosphates that boost algae growth		
Raw material for natural fibre (based on recycled material)	Use of recycled materials that would have gone to landfill reduces pressure on existing landfills – thereby reducing pressure on conversion of natural habitats.	Not applicable as specific species is not exploited.	The recycling of synthetic fibers can be either mechanical, chemical or thermal. The recycling process can also result in emissions to air, ground and water. The risk depends on how the production process is being managed with respect to environmental pollution.	Use of recycled materials can reduce GHG emissions, provided lifecycle emissions profiles clearly demonstrate this.	Not applicable as specific species is not exploited.
Raw materials for synthetic fibres (derived from petroleum-based fibers)	Polyester and synthetic rubber is derived from petroleum. Mining for non-renewable resources that create polyester (coal and petroleum) can destroy natural habitats during the process. The degree of risk depends on whether the demand for polyester is increasing pressure on natural habitats or if it is met from existing fossil fuel sources as a by-product.	Not applicable as specific species is not exploited.	The raw materials i.e. chemicals, water etc. used for manufacturing operations can potentially cause damage to the environment.	The manufacturing of synthetic fibre requires energy, thus releasing greenhouse gas during the manufacturing process.	Not applicable as specific species is not exploited.
Raw materials for synthetic fibres (based on recycled material)	Use of recycled materials such as plastic bottles or used clothes that would have gone to landfill saves petroleum, reduces dependency on oil, and reduces pressure on existing landfills – thereby reducing pressure on conversion of natural habitats.	Not applicable as specific species is not exploited.	The recycling of synthetic fibers can be either mechanical, chemical or thermal. The recycling process can also result in emissions to air, ground and water. The risk depends on how the production process is being managed with respect to environmental pollution.	Use of recycled materials can reduce GHG emissions, provided lifecycle emissions profiles clearly demonstrate this.	Not applicable as specific species is not exploited.
Manufacturing	Manufacturing typically takes place in industrial areas, but an assessment for any biodiversity risks of the manufacturing site must be conducted.	Not applicable as manufacturing takes place in industrial areas.	Large amounts of energy, water and chemical uses in the manufacturing stages, makes it an extremely resource-intensive industry. Use of these resources result in pollutants being released in air, ground and water supply.	Large amounts of energy is used in the manufacturing of textiles. The major source of energy used is fossil fuel derived, which lead to high GHG emissions.	Not applicable as manufacturing does not uses any species

Assessing the risks & opportunities

The table below provides a description of the risks and opportunities in the value chain stages based on impact and decencies of Arvind on biodiversity:

Value chain	Direct Pressures on Biodiversity				
	P1: Loss, Degradation and Fragmentation of Habitat	P2: Overexploitation of Biological Resource	P3: Excessive Nutrient Loads (especially nitrogen & phosphorous) & other forms of Pollution	P4: Climate Change including Acidification of Oceans	P5: Invasive Alien Species impacts on Ecosystems
Raw material for natural fibre (sourced from farmed crops) Main material used: Cotton Other sources of material used: flax, hemp	The probability of impact is Medium, whereas the magnitude of impact is High. In case the area is near high conservation value areas the magnitude will become Very High.	Not applicable for farmed crops	The probability and magnitude of impact is High in case of conventional agriculture practices. In case conventional agriculture is being practiced near areas of high conservation value the magnitude will become very high. However for sustainable agriculture practices the magnitude and probability of impact is Low.	The impact on climate change from the production using conventional agriculture practices is High. However, for sustainable agriculture practices the impact is Low. On the other hand the impact of climate change on production is High.	The crops farmed for natural fibers are not considered invasive species.
Raw material for natural fibre (sourced from trees): Viscose, Bamboo	The probability and magnitude of impact is High if unsustainable harvesting methods are followed. If sustainable harvesting is followed the probability and magnitude of impact could be Low. In case the area is near high conservation value areas the magnitude will become Very High.	Unsustainable exploitation of species i.e. above the maximum sustainable yield will leads to high magnitude of impact. The probability of this is high where the regulations are not strong.	The probability and magnitude of impact is High if the fibre production processes uses hazardous chemicals. If the production is near high conservation value areas the magnitude will become Very High.	The impact from and to climate change is High. Due to clearing of forests, the carbon stored will them will be released causing GHG effect, on the other hand changing climatic patterns will negatively impact the growth of trees.	The probability and magnitude of the impact is very low unless plantations with invasive tree species are done.
Raw material for natural fibre (based on recycled material)	The probability and magnitude of impact is very low as the waste material which was getting disposed in the environment will be re-used thus reducing negative impacts from disposal into environment.	Not applicable as specific species is not exploited.	The probability and magnitude of impact is Low to Medium depending on the production process used for recycling.	The impact on climate change is low since recycling of material eliminates the emission in the end-of-use phase. The impact from climate change is unknown.	Not applicable as specific species is not exploited.

Raw materials for synthetic fibres (derived from petroleum-based fibers)	Manufacturing generally takes place in industrial areas, so the probability and magnitude of impact is Low. However, if the manufacturing operations are in areas that faces water issue and the water is consumed unstainable the probability and magnitude of impact can be High. Also, if the manufacturing operations happen near high conservation value areas specially areas rich in aquatic biodiversity the magnitude can become Very High.	Not applicable as specific species is not exploited.	The probability and magnitude of impact is High since the production process use hazardous chemicals and fossil fuel based raw materials. Also, the water discharge after processing can cause high impact due to toxic load, micro plastics, etc. The severity and probability of impact can decrease if sustainable practices are adopted for manufacturing.	The impact from and to climate change is Very High, since the raw material for the production of fiber is fossil fuel based. The impact to climate change can become High or Medium depending on the sustainability practices adopted by the manufacturer of synthetic fibers.	Not applicable as specific species is not exploited.
Raw materials for synthetic fibres (based on recycled material)	The probability and magnitude of impact is very low as the waste material which was getting disposed in the environment will be re-used thus reducing negative impacts from disposal into environment.	Not applicable as specific species is not exploited.	The probability and magnitude of impact is Low to Medium depending on the production process used for recycling. The magnitude of recycling is much less compared to virgin synthetic fibre production.	The impact on climate change is low since recycling of material eliminates the emission in the end-of-use phase. The impact from climate change is unknown.	Not applicable as specific species is not exploited.
Manufacturing	Manufacturing generally takes place in industrial areas, so the probability and magnitude of impact is Low. However, if the manufacturing operations are in areas that faces water issue and the water is consumed unstainable the probability and magnitude of impact can be High. Also, if the manufacturing operations happen near high conservation value areas the magnitude can become Very High.	Not applicable as manufacturing takes place in industrial areas.	The probability and magnitude of impact is High since the production process use hazardous chemicals and fossil fuel based raw materials. The severity and probability of impact can decrease if sustainable practices are adopted for manufacturing.	The impact to climate change is high if the manufacturing operations uses fossil fuels for energy. The impact from climate change is high, in case the company has adopted resilience measures the impact can reduce.	Not applicable as manufacturing does not uses any species

Responding to the risk & opportunities

From the identified biodiversity related risk and opportunities, it can be concluded that the impact and magnitude of the risk varies according to the geographic location as well as the value chain stage. To mitigate the risks and leverage the potential opportunity we will use the AR^{3}T Framework. It is a step-by-step framework which is in line with the best available environmental science. It consists of four steps – Avoid, Minimise, Restore & Regenerate and Transform.

Avoid	Minimise	Restore & Regenerate	Transform
• The first step to stop biodiversity impacts • Avoid negative impacts where possible by choosing a difference location, process or timescale. • Avoidance is opften the most effective and least expensive mitigation actin but requires risk to be considered at early stages.	• Where you can't avoid - minimise • Reduce the negative impact on biodivesrity where avoidance is not possible.	• Positve actions - measurable gains • Restore & regenerate when impacts can not be avoided or fully reduced. This could include restoring natural habitat on least productive land or revegetation areas. • Regenerative measures on working lands enhance biodivesrity and ensure system resillience.	• Driving change at global scale • Create the enabling conditions for success and for catalysing broader ppositive change for biodiversity. • Example by pooling dat between actors in a sector or joining up with multiple stakeholders to drive change in a landscape.

We have devised the following potential actions as per the AR^{3}T framework below:

Stages	Potential Actions
Avoid Impacts	Move to deforestation-free supply chains i.e. raw materials sourced from existing managed landscapes for agriculture or forestry activities.
	Avoid using conventional cotton or substitute with a material with lower impact
	Avoid purchasing cotton where traceability cannot be established
	Avoid discharge of wastewater
Minimise Impacts	Reduce the environmental footprint by promoting sustainable agriculture practices.
	Increase the traceability of supply chain to ensure that production areas does not overlap areas with high conservation value
	Reduce the use of freshwater for textile manufacturing processes
	Substitute hazardous chemicals with less hazardous one
	Reduce the use of non-renewable sources for energy
Restore & Regenerate	Restore the productivity of agricultural land using regenerative agriculture practices, thus reducing the need to expand to newer areas.
	Encourage certification which focus on restoration and regeneration
Transform	Work with organisations in the textile sector to identify innovations that reduce the impact caused on biodiversity and environment.
	Work with certification standards to include biodiversity related criteria's as part of the standards.
	Promote landscape restoration by joining or developing initiatives

Targets

Natural systems are dynamic and there is often a delay between taking action and seeing a measurable change. Measuring the output delivered through the actions taken helps in demonstrating the progress made against the pressure drivers, even if the desired final impact on the ecosystem is undetectable. Without measurement of actions against the set targets it is difficult to understand the effectiveness of our strategies for biodiversity management. The targets, its description, indicator used for measurement and its relevance to various pressure drivers is listed in table below:

Target Description	Indicator	Relevance to Various Biodiversity Pressure Drivers				
		P1	P2	P3	P4	P5
By 2025, 100% of our man-made cellulosic fibre (MMCF) will be source from sustainably managed areas	Proportion of MMCF sourced from sustainably managed areas (%)	Yes	Yes	No	Yes	Yes
By 2025, 50% of our sourced cotton will be sustainable	Proportion of sustainable cotton sourced (%)	Yes	Yes	Yes	Yes	No
By 2025, 100% of chemicals will be compliant with ZDHC MRSL	Proportion of chemicals sourced compliant with ZDHC (%)	Yes	No	Yes	Yes	No
By 2025, 100% of our facilities will practically eliminate freshwater use for manufacturing operations	Proportion of freshwater used compared to total water use (%)	Yes	Yes	Yes	Yes	No
By 2025, 0% of our industrial effluent will be discharged	Proportion of industrial effluent discharged (%)	No	Yes	Yes	Yes	No
By 2025, 40% low carbon or renewable energy will be used for business operations	Proportion of low carbon or renewable energy consumed (%)	No	No	Yes	Yes	No
By 2025, 40% reduction of greenhouse gas emissions compared to baseline of 2015	GHG emissions ($MTCO_2e$)	No	No	Yes	Yes	No
By 2024, transform 15,577 hectares of conventional agriculture to organic agriculture	Hectares of land (ha)	Yes	No	Yes	Yes	
By 2025, promote agriculture using regenerative practices for 4900 hectares of land.	Hectares of land (ha)	Yes	No	Yes	Yes	

Way Forward:

Depending on the nature of the business and the focus areas the impact on biodiversity varies. There are multiple methodological approaches that are developed (example EP&L) or are still in development stage (example Science Based Targets for Nature) which can be used to understand the biodiversity impacts. However, not necessarily all the pressures on biodiversity will be covered by one methodological approach or one approach is relevant for all the focus areas of a business. Example, the Biodiversity Impact Metric (BIM) only focusses on use change, Product Biodiversity Footprint (PBF) covers all the pressure drivers however it can be used only at a product level, Species Threat Abatement and Restoration (STAR) metric needs detailed monitoring of threats to understand its change at a temporal scale relevant to the organisation. We at Arvind understand the challenges of assessing biodiversity impact and as the science behind biodiversity impact strengthens we will continue to update and align our strategy and targets with the best available science.

References

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