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The Untapped Potential of Water Funds in Volatile Global Markets: The Road Ahead

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Abstract— **As the mutual fund markets have grown across India, growth of Environmental, Social and Governance (ESG) funds have been the mainstay of the Indian mutual fund industry during 2020-2022. In the present Indian market scenario, there 11 mutual funds that cater to the thematic fund category of ESG funds with assets under management (AUM) of about forty thousand crores. Governance has always attracted, but environmental and social aspects have taken center stage as regulators all over the world demand prudence from the companies that are into world markets.**

The management of water represents a major challenge to the generations ahead and is considered as an investment for the future. There are 65 water funds globally, which have assets under management of about 35 billion dollars. After the success of these funds as a form of ESG investing, there is now a demand for water Exchange Traded Funds (ETF), on the New York Stock Exchange (NYSE) and the NASDAQ. In view of the need for investments in a natural resource BNP Paribas Asset Management Company (AMC), a Fund of Funds (FOF), which invest into the global value water chains of the world.

This was a new concept in the world of ESG and many of the Indian investors, shied away on investment in the same. The paper seeks to look at ESG as a form of investment, water value chain mutual funds and the ETF in the same area. t would also look at the performance of these funds in this reference through the statistical and financial tools, within a time-frame of one year, as these funds have been a recent market phenomenon.

Keywords- Water Funds, Exchange-Traded Fund, Funds of Funds, Environment Social and Governance, Asset Management Company

I. Introduction

We never know the worth of water until the well is dry- Thomas Fuller

The planets most valuable resource is water and the most important source of the survival of its flora, fauna and life. As water becomes scarce and as a famous man once remarked *"Next wars are going to be fought on water and its distribution"* it underlines the need for development of water infrastructure and management of water is of paramount importance. As the need for water infrastructure grows in the market and maintenance of water resources require capital investment in the long run.

The capital markets in India are a very important part of the financial system in which companies plan to raise funds for their long-term requirements. Demand for long term capital requirement comes from the private sector predominantly from the primary sector, secondary sector, tertiary sector, quaternary sector, quinary sector of the economy. Capital for these requirements comes from the capital markets in the form of individual savings, mutual funds, insurance companies, banks, specialized forms of financial institutions, high net worth individuals, venture capitalists and angel investors. As individuals in the world and especially in India, begin the long road towards investment in capital markets there has been a new ethos and responsibility that has been seen by new investors in the capital markets.

In the last few years there has been an increase in sustainable investing, which at the beginning was done by institutional investor, the year 2020 has seen the advent of new mutual funds in the area of sustainable investing. The Indian market has seen the launch of new funds in the area of Environment, Sustainable and Governance (ESG) as investors have after there has been an increase in retail investing. Data shows that there has been a 19 percent increase in the investment in ESG funds in India but from July, 2021 the outflows from these funds have also increased as there have been issues on the legal front and there being no proper laws on the ratings of ESG. The second issue has also been that there have been no single reporting standards on ESG. As the investor in India moves towards sustainable investing there are unanswered questions and it can be seen the cost of reporting for an ESG companies may outweigh the real impact of the same.

Indian markets have launched about six ESG funds after and during the pandemic with big mutual fund houses playing the part. In the ESG funds that have been launched in India, an important resource has been an important part of ESG investments in the world but the same cannot be said about Indian ESG funds. The only water or aqua fund that was launched in India is the Baroda BNP Paribas Funds Aqua Fund of Fund which has its major investment in the BNP Paribas

Funds Aqua UI8 USD capitalization of about 99.19 percent is invested in the water funds and ETF in the United States stock markets.

II. The Era of ESG Funds: An Introduction

As the world has grown and investors have felt the need to be more responsible towards society and the Governments of the day have risen to the new problems on climate change and the era of social unrest there has been a move by investors towards sustainable investing. Sustainable investing has been seen by some as a game changer in which there can be the best of two worlds. It has been seen by the theorists that they can help in the social change that the world needs at the present and investors and companies can benefit themselves from the financial investment made and companies can make their business sustainable. Sustainable investing is now also known as ESG investing or socially responsible investing by both the investors and business organisations.

As the world goes through the era of the pandemic, inflation interest rate hikes, demand, supply and logistics companies are facing the challenges of survival and the profit conundrum. In the capitalist economies of today companies face a major challenge on the financial performance that is to maximize the wealth of the shareholders. The present-day business leaders believe that along with profit maximization, sustainability initiatives undertaken by companies should be the grounds for the business success. As sustainable investing becomes popular in the markets and companies move towards the same ESG has become the new buzz word of the mutual fund mangers in the world market today.

I this there has been an ongoing rush in various world markets to launch new ESG funds and Exchange traded funds (ETF) to show their responsibility towards sustainability. In the United States of America (USA) the importance of ESG has been much in demand in the year 2021where inflows into ESG funds increased to 330 billion dollars of Assets under Management and new funds are on the anvil to be launched throughout 2022. Green issuance finance in the USA has also been on the rise, also known as Green Debt Issuance which included green loans and green sustainable and sustainability bonds and the estimates ranged from about $ 350 billion to $ 500 billion on an average basis.

After the pandemic there has been an increase in ESG activism and this has led to the US administration to look into the issues with companies that were flouting norms in the name of ESG and also those mutual funds and ETF that were not adhering to the norms. ESG activism in the USA has also led to better governance principles but they have led to issues with regard to companies like Exxon Mobil and Shell with regard to gas emission cuts in the year. As this activism goes ahead in the USA there has also been a demand to look into the big tech companies which have a very complex relationship with fossil fuel companies.

In this it can be seen that the present administration in the USA, the ESG initiatives that are on the anvil may see its policy implementation in the year 2022.This could be in line to the ESG related rules and regulations that have come into force in the United Kingdom (UK) on January 1st, 2022. The United Nations Principles on responsible investment and its six principles propounded in 2006 and its subsequent impact have also brought to the fore the need for new regulations. In this the European Green Deal in 2021 has the new Green Finance regulations through the Sustainable Finance Disclosure Regulation (SFDR) would be able to classify the companies on the basis of the ESG.

In India water management has been at its lowest ebb as 74 percent of the water from the rivers of India are unused and find their way to the Oceans. Then the Government of the land talks of desalinating the water which would require a huge amount of investment for which companies bid and invest in the same. As the population of the two biggest economies of the world China and India there is a problem of providing water infrastructure along with the resources for the same.

III. Objective of the Study

- To understand the ESG markets, specifically in Indian reference and evaluating the performance trends of these funds
- To gauge the risks associated with, water asset prices in the world and the need for funds for the development of infrastructure
- To establish the relationship between risk and returns in water funds through the usage of statistical tools for comparing funds

IV. Hypothesis

The state of ESG funds in India vis-à-vis to water funds is still too primitive and not adequate in comparison to ESG funds in USA.

V. Literature Review

Water shortages occur due to rapid economic development and lack of water infrastructure finance (Reza et al., 2017; Tularam, 2014)

Investment in sustainable funds is less risky when compared to traditional equity funds (Xiao-Guang Yue et al,. 2020)

Can it be said, that investors can form any form of portfolio on the signals that are given by ESG which contain the basic risk and return characteristics and some other information that could make the investor make a clear and optimal portfolio. (Boffo. R, and R. Patalano (2020))

VI. Limitations

The data used for this study is secondary in nature, thus it may have the inherent lacunae in it. Besides, major ESG funds in India are in their infancy state; because most of them have been launched in 2020-21. Therefore, irrespective of the clear and present urgency of the rising water crisis in India, the data on which, the empirical and statistical tools are used, may not portray a convincing and precise diagnosis and their incidental predictions.

VII. SUSTAINABILITY INVESTMENT IN INDIA – ESG – AN INNOVATIVE INVESTMENT IDEA AT THE HORIZON

The history of mutual funds in India dates back to the year 1963 with the launch of the Unit trust of India (UTI) which was a joint initiative between the Reserve Bank of India (RBI) and the Government of India. Mutual funds are considered to be the pooling of savings and the investment into various schemes which are divided into units. Every investor in the hope of capital appreciation invests his money into these schemes which are managed by a Fund Manager. As investments in banks and traditional form of investment offer lesser returns it has been seen that investors are now moving towards investments into mutual funds in India.

Growth of mutual funds in India has a seen a phenomenal increase by more than six times from the year 2012 to the year 2022 from 5.87 trillion in March ,2012 to 37.57 trillion in March, 2022 and the number of mutual fund portfolios to 10 crore portfolios. Investment objectives of investor are important for capital appreciation, regular income, tax savings etc. are the main issues for the investor. Based on these, mutual funds in India divided into the following categories:

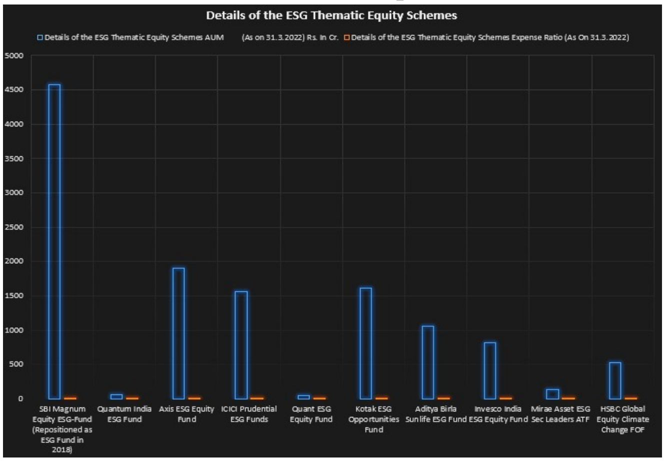
- Growth Funds
- Liquid Funds
- Income funds
- Tax Saving funds
- Thematic/ Sectoral funds

Table A

Details of the ESG Thematic Equity Schemes					
Name of the Scheme	**Launch Date**	**AUM (As on 31.3.2022) Rs. In Cr.**	**Expense Ratio (As On 31.3.2022)**	**NAV (As on 06.05.2022)**	**Fund House**
SBI Magnum Equity ESG-Fund (Repositioned as ESG Fund in 2018)	27.11.2006	4582.71	1.35	165.11	SBI Mutual Fund
Quantum India ESG Fund	12.07.2019	58.04	0.93	16.1	Quantum Mutual Fund
Axis ESG Equity Fund	12.02.2020	1897.45	0.54	15.06	Axis Mutual Fund
ICICI Prudential ESG Funds	09.10.2020	1560.27	1.01	12.89	ICICI Pru Mutual Fund
Quant ESG Equity Fund	06.11.2020	52.76	1.35	20.19	Quant Mutual Fund
Kotak ESG Opportunities Fund	11.12.2020	1619	0.38	11.54	Kotak Mahindra Mutual Fund
Aditya Birla Sunlife ESG Fund	24.12.2020	1060.66	0.49	12.14	Aditya Birla Sun Life Mutual Fund
Invesco India ESG Equity Fund	18.03.2021	820.05	0.25	12.06	Invesco Mutual Fund
Mirae Asset ESG Sec Leaders ETF	17.11.2020	140.64	0.22	12.58	Mirae Asset Mutual Fund
HSBC Global Equity Climate Change FOF	17.03.2021	523.28	1.34	8.62	HSBC Mutual Fund

In India there are 44 mutual fund houses, which cater to the Indian investor and offer to the Indian investor investment into equity, debt and commodities markets. Investment into thematic funds in India are into sectors like real estate, technology etc., and ESG is a nascent concept for the investors in India though all over the world, more than 3000 ESG schemes are prevalent in all the capital markets of the world. India has seen the growth of ESG funds in the past 3 years with the launch of new schemes by various mutual fund houses.

Table A Graph



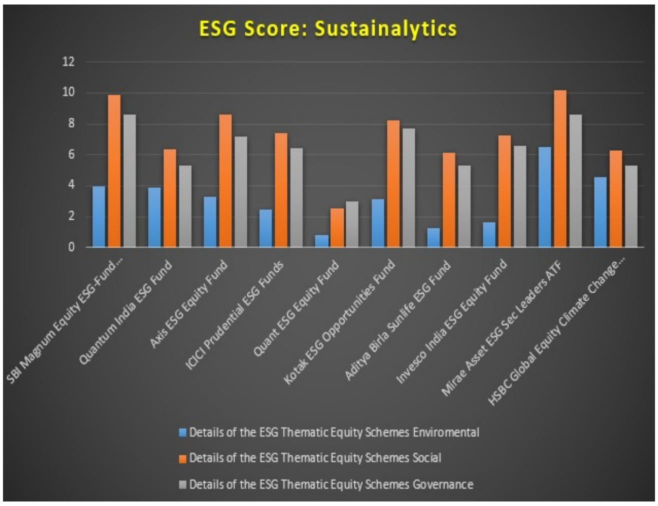
Observations on the Data and Trends of Table A:

The oldest fund in this category is SBI magnum ESG fund and its AUM is the highest along with the highest expense ratio. The remaining funds have been launched during the year 2020- 2022 but some of these ESG funds have high expense ratios. It is also an indicator that the portfolio of these funds is risky along with their investment being in some companies which may not fall under the ESG category.

Table B

ESG Score: Sustainalytics				
Name of the Scheme	**Launch Date**	**Enviromental**	**Social**	**Governance**
SBI Magnum Equity ESG-Fund (Repositioned as ESG Fund in 2018)	27.11.2006	3.95	9.89	8.59
Quantum India ESG Fund	12.07.2019	3.89	6.39	5.34
Axis ESG Equity Fund	12.02.2020	3.3	8.64	7.15
ICICI Prudential ESG Funds	09.10.2020	2.43	7.41	6.44
Quant ESG Equity Fund	06.11.2020	0.82	2.56	3.02
Kotak ESG Opportunities Fund	11.12.2020	3.17	8.21	7.72
Aditya Birla Sunlife ESG Fund	24.12.2020	1.23	6.1	5.31
Invesco India ESG Equity Fund	18.03.2021	1.67	7.27	6.56
Mirae Asset ESG Sec Leaders ETF	17.11.2020	6.5	10.15	8.63
HSBC Global Equity Climate Change FOF	17.03.2021	4.57	6.28	5.31

Table B Graph



Observations on the Data and Trends of Table B

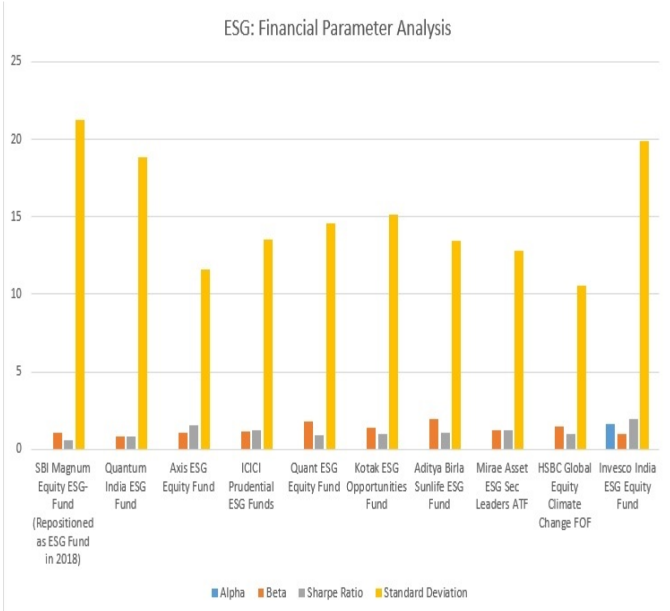
It can be seen that the data was analyzed on the basis of Environmental, Social, Governance with the use of analytics and the results, be analyzed as follows:

- ESG score of SBI magnum ESG fund is better as the fund has completed 3 years and the performance can be measured with data
- For the other funds most of them have completed more than a year so the real and correct picture with regards to the ESG needs more data for exact computation
- It was seen that most of the companies that the new ESG funds had invested were into the technology sector and consumer staples and not into any form of niche companies
- It can also be inferred that in the short run, ESG funds cannot be measured against the long run ESG funds
- The ESG scores of SBI magnum and Mirae Asset are good as per the percentile which indicates transparency in the reporting of the companies that they hold in their portfolio

Table C

ESG: Financial Parameter Analysis						
Name of the Scheme	**Launch Date**	**Alpha**	**Beta**	**Sharpe Ratio**	**Standard Deviation**	**Duration Considered**
SBI Magnum Equity ESG-Fund (Repositioned as ESG Fund in 2018)	27.11.2006	(-)1.76	1.04	0.57	21.28	3 year period
Quantum India ESG Fund	12.07.2019	(-)2.63	0.85	0.81	18.84	3 year period
Axis ESG Equity Fund	12.02.2020	(-) 0.96	1.08	1.52	11.58	2 year period
ICICI Prudential ESG Funds	09.10.2020	(-)1.15	1.16	1.27	13.55	more than 1 year
Quant ESG Equity Fund	06.11.2020	(-)1.12	1.83	0.95	14.56	more than 1 year
Kotak ESG Opportunities Fund	11.12.2020	(-)1.52	1.4	0.99	15.12	more than 1 year
Aditya Birla Sunlife ESG Fund	24.12.2020	(-)2.14	1.95	1.1	13.44	more than 1 year
Mirae Asset ESG Sec Leaders ETF	17.11.2020	(-)0.667	1.22	1.25	12.85	more than 1 year
HSBC Global Equity Climate Change FOF	17.03.2021	(-)1.25	1.44	1.01	10.53	more than 1 year
Invesco India ESG Equity Fund	18.03.2021	1.62	1.01	1.968	19.85	more than 1 year

Table C Graph



Observations on the Data and Trends of Table C

The Beta of all the ESG funds is high as all the funds except the Quantum ESG fund has a beta greater than 1 and the industry average was about 0.97 which indicates that the risk and return are directly correlated and risk in these funds are very high.

Alpha of all the ESG funds that have been studied have delivered negative returns when compared to the benchmark indices which is the NIFTY in the above case. This could make a case that the traditional Equity funds which have investments into other companies have offered about 10- 15 % to their investors above the benchmark indices.

In case of the standard deviation the funds whose time period was greater than 3 years had higher implied volatility of 21.28 whereas the implied volatility was about 18.61 on the average.

Sharpe ratio of these funds cannot be used as a comparison as two of the funds are greater than 3 years whereas the others are about 1 year old as the risk-free rate through which the ratio is calculated cannot be the same for 3 years and about 1 year and above.

VIII. WATER FUNDS IN THE WORLD – A GAME CHANGER

As population, economies grow like there is no morrow climate change, cities have placed pressure on water resources all over the world. Rising stress in case of water, flooding, variability in the supply of water, treating water as a product, pollution of water has all been the reasons for being a drag on the economic growth of many countries. Investments in water security and economic growth are interlinked to each other and many countries have not understood the need for having a policy on the same. The increase in the cost of water management has also not been assimilated by countries along with the realization that the investment in water supply and sanitation facilities have not kept up with the times. The Organisation for Economic Cooperation Development (OECD) has identified four levels of water risk:

- Too little water including drought
- Too much water including floods
- Too polluted water
- Degradation of water ecosystems

The Global dialogue on Water Security and Sustainable Growth, a joint initiative by both the OECD and the Global Water partnership has tried to examine the relationship between water management and economic growth. It has said that as water risk all over the world increases, then there could be others that could take advantage of the scarcity of this natural resource. Water being a irreplaceable resource there have been instances where there is investment strategy through water funds to protect climate change and to provide the cash resources through the water funds either in the form of mutual funds or through ETF's. It has been seen through the OECD report that China and India face the greatest economic burden of water insecurity in the years to come.

As the world grapples with the management of water, the management of water and water services is a big challenge. It is also an opportunity to the investors to invest money into those business that deal with water resources.

IX. THE WATER FUNDS AND ETF IN THE US MARKETS – AN ANALYSIS

As the global markets trade in equity and debt funds and also the index that track them the markets in the USA have take to water funds as a form of investment in a big way. Investors who want to have sustainability as a form of investing in their portfolio have started investment into water funds and ETF as some water funds and ETF in the USA which are popular:

- Invesco Water resources
- Ecofin Global water ESG
- Calvert Global Water
- First Trust Water
- Invesco Global Water
- Invesco S&P Global Water
- KBI Global Investors Aquarius
- Virtus Allianz GI water

ETF in the United States markets that have access to the same are and the respective BETA that have been calculated in the year 2021 have been calibrated as per the morning star Direct as:

First Trust Water ETF	1.25	0.54
Invesco Global Water ETF	1.04	0.75
Global X Clean Water ETF	NIL	0.50
Invesco S&P Global Water ETF	1.08	0..57
Invesco Water resources ETF	1.19	0.60
KBI Global Investors Aquarius	1.09	1.10

It can be seen that the Beta of the water funds in the USA are greater than 1 which indicates that the risk exposure is high which ranges from 1.04 to 1.25. This indicates that which indicates that the water funds move in tandem with broad market indices. It can be said that in through the data that has been processed through the water funds in the USA that they are functioning more as sector funds rather than thematic funds.

The major issue for all the water funds is the expense ratio and the fees that are associated with them. As can be seen the expense ratio on the money water ETF is high when compared to the ETF of other equity funds. It has also been seen that these ETF move along with the major indices of the Dow Jones, NASDAQ. The high expense and fees may be a deterrent to investors who want to park their funds for capital appreciation.

From the standpoint of investments in water funds and ETF in the USA it can be seen that most of these funds have an exposure to pure old equity. The correlation of these funds when compared to the MSCI All-Country world index is 0.93 which again proves that these funds move in tandem with the broader market indices and function more as sector funds as discussed earlier.

Capital appreciation on the investment is the endeavour of any fund manager and the performance of these water funds and ETF are in the dearth of opportunities as the market is narrow for such a natural resource in the United States capital markets. These funds are utilities with tag names, as they deal with heavily regulated product like water so the scope of these funds outperforming the market in the short run is limited. In the long run these funds and ETF have been able to match the index but the tag still remains that they are invested heavily in equity related assets.

X. CONSLUSION

The stone age was not over, as the stones were depleted. It was over as mankind innovated different other resources and methods for their needs. This analogy cannot be applied to water. Water is the inevitable and necessary foundation of every life on earth, including ours. Irrespective of the recycling trait of this resource, the satirical ignorance of the prudent decisions of mankind, have brought us to all to a very precarious and horrific state of affairs. The peninsula, viz. India, as a crucial theme in this discussion, is surrounded on three sides by sea-water and has ample river-water and allied resources. But, every monsoon we see the history repeating itself, i.e. millions of liters of water wasted through-out. The government in light of taking this rising crisis, must provide incentives and platform for the ESG funds, which are working to improve the water infrastructure across the country. So that the funds may be channelized for better returns for this cause. And resultingly, the water-management issues may get the much-needed investments, where they need it the most, creating an overall synergy for every sector of the county. If such measures are not taken timely, in the water infrastructure through ESG vehicles, there may not be any time left and no option choose except suffer and perish. A heavily regulated industry, water funds have different parameters in India, creation of specific funds may increase cost. ESG funds can be used as investment vehicles for these funds that can contribute to the development of infrastructure, since capital expenditure is required.

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