Introduction

- Without use of pesticide crop losses can be accounted as,

Fruits - 78%, Cereals - 32%, Vegetables - 54%

Global pesticides market is projected to grow from around $ 75 billion in 2017 to $ 90 billion by 2023

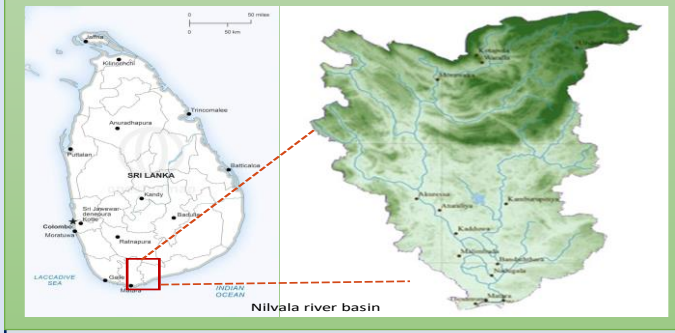
- Eutrophication
- Ground water contamination
- Land pollution
- Heavy metal contamination
- Eco system degradation
- Accumulation through food webs
- Harm to health

Objectives

- To understand the knowledge, attitude, practices and applications of chemical fertilizers in Nilvala river basin by farmers
- To quantify the agro chemical usage in the Nilvala river basin.

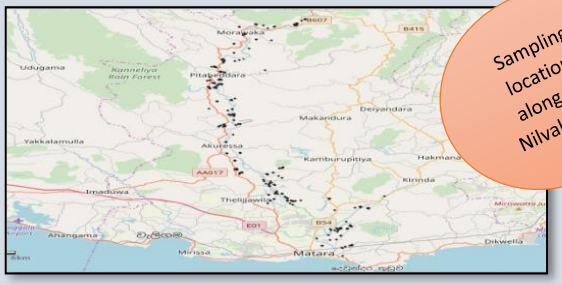
Methodology

1. Area Identification



2. Data collection

- Questionnaire was used to interview farmers and gather data
- Secondary data were gathered from each Divisional Secretariat Office.
- 500 samples were taken using purposive sampling technique.

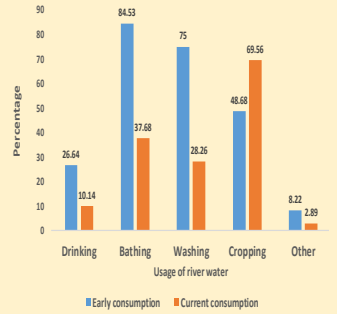


3. Data analysis and mapping

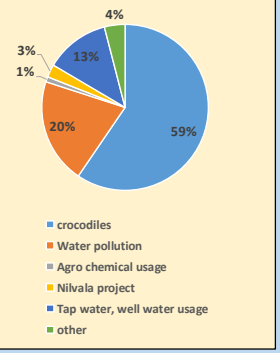
- Data analysis was done by using descriptive and statistical techniques.
- Agro chemical usage in each District Secretarial division was quantified
- Most polluted areas along the river basin were mapped using ArcGIS software

Results

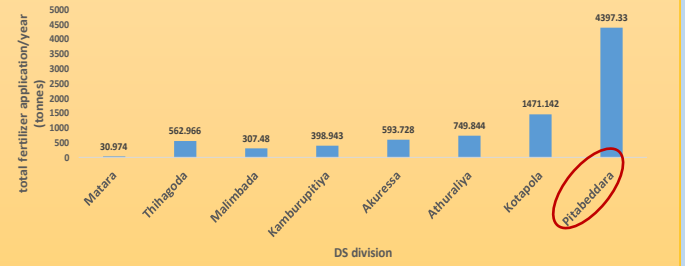
Different uses of Nilvala river water and their changes with time



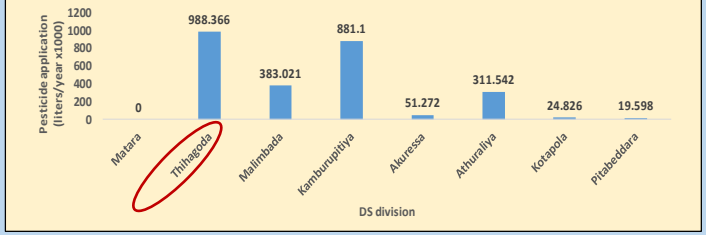
Reasons for the reduction of water consumption of the river



Total fertilizer application in each DS division



Total Pesticide application in each DS division



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Influence of Agro-chemical Usage on Water Pollution In Nilvala River
A Case Study in Thihagoda, Sri Lanka

Major Findings

- The major polluted area by fertilizer application is Pitabeddara DS division.
- Highest pesticide usage is reported in Thihagoda DS division
- Tea is the major crop type which consume highest amount of fertilizer.
- Rice is accounted as the major crop type which cause to apply the highest amount of pesticides.
- The Nilvala river water consumption patterns are highly changed due to increment of crocodile population and agrochemical usage.
- Aquatic ecosystem of Nilvala river is highly disturbed with excessive usage of agro chemicals
- Farmers are likely to shift for organic fertilizers. But, there are no any recognizable organic fertilizer which provide high yield with low cost.
- Even there are standard amounts for applying agrochemicals farmers are ignoring standards and using excessive amount of chemicals for getting high amount of yield.

Suggestions to reduce agro chemical usage

- Provide high quality, efficient and low cost organic fertilizers for all types of crops.
- Improve and promote traditional methods to control weeds and pests.
- Government should provide subsidies and encourage farmers to reduce agro- chemical usage.
- Proper rules, regulations and acts should be developed to control agro chemical usage in Sri Lanka.
- Specially, highly toxic chemicals should be banded in the country to prevent usage of those chemicals as weedicides or pesticides.
- Proper disposal methods should be developed to dispose bottles, containers and bags of agro chemicals. Farmers should be aware about proper disposal methods and strict regulations should be developed to control dumping.
- Proper researches should be focused to introduce efficient organic fertilizers and machineries to reduce agrochemical usage.
- Traditional breeding varieties which are tolerant to weeds, pests and environmental conditions should be promoted and new breeding varieties can be introduced to reduce agrochemical usage.

A Survey on Agro-Chemical Usage and Its Allied Effects of Water Pollution in Nilvala River Basin – Sri Lanka

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