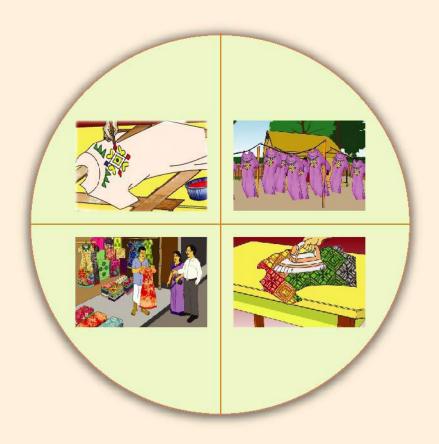
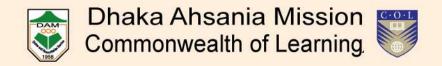




Learning material for the enhancement of livelihood skills for people with limited reading skills

## **Batik Print**





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Learning material for the enhancement of livelihood skills for people with limited reading skills

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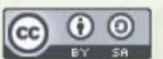
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Illustration of this booklet have been taken from the animation video



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## Preface

Bangladesh is a country of enormous possibility. Yet, majority of its people have to live in poverty, malnutrition, unemployment, superstition and many other forms of deprivation including natural disasters. Development workers, however, think that this situation can be changed by providing them with education and enhanced skills.

With this prospect in mind, Dhaka Ahsania Mission, since the early onsets of its development drive has been emphasizing on education, and has operated various non-formal education programs for different groups of people. DAM has taken up the initiative to impart skills development training to those people and thus create a pool of human resource from them. Considering the prime tool to execute all these activities, DAM has persistently been preparing education materials of various types and merit as per the needs of different groups of people for their basic and continued education. Presently, Dhaka Ahsania Mission has, in its credit, more than four hundred basic and continued education materials of different titles.

In line with the previous publications, during 2003 – 2004, DAM developed a series of 21 books on skills enhancement and income generating activities. Later, in 2009, three more materials were developed for the workers in the Ready Made Garments (RMG) sector. Basing on that experience, DAM's 'Center for International Education and Development' (CINED) has taken an initiative to develop one more series of livelihood skills enhancement education material with the heading 'let's work and construct our lives'. Primarily, in this series, 5 booklets have been developed on 5 different topics. Each book under this series is complemented with an animation video. The users of these booklets will be greatly benefitted by the videos as they can better understand their jobs better and can grasp those well after watching the videos alongside reading those.

A list of competences that the learners would achieve after reading this booklet has been given at the end of this book. We think that the organizations that are providing training on skills development would be able to play an effective role in imparting competency-based training to the informal sector using the booklets and animated videos of this series. We hope that these materials would be used extensively in the topic-based training of the post-literacy and continued education activities under the non-formal education programs.

The booklet 'Batik Print' is one of the vital books. The other booklets in this series are: Vermi Compost, Poultry Rearing, Flower Gardening, and Nursery. In the booklet 'Batik Print', it is succinctly discussed in an easy to understand language, the methods of batik printing and ways to market and sell it.

Chief Executive Officer of CINED, Mr. Shahnewaz Khan, was has carried out the responsible for the responsibility of the overall coordination of the planning and development of the booklets and the animation videos of this series. "I would like to convey my gratitude and thanks to all who were involved in the development of this booklet. We are sincerely grateful to Commonwealth of Learning (COL) for their generous financial assistance in the development of this series."

We believe that, after reading these booklets, watching the animated videos and using the information, innumerable number of unemployed women and men would be able to build their home-based small businesses. As a result, their quality of their life will be improved, and they can contribute effectively to the process of national development. We would consider, with due importance, any suggestion from you regarding the booklets and the animation videos of this series while publishing the next edition.

December, 2012

Kazi Rafiqul Alam
President
Dhaka Ahsania Mission



## **Batik Print**

Batik print is the process of making a special kind of design on clothes. This type of design has a distinct splendor. Batik print can be made on cotton or silk saree, salwar kamiz and lungee etc. To make this design, first you have to create a design on a piece of cloth and wrap it up with wax. Then an emulsion of liquid dye has to be prepared in a pot, by mixing water with dye of a color of your choice. When it's ready, you have to soak the cloth in the emulsion. When the cloth is stirred in the liquid, the wax coating cracks and the dye seeps in through the cracks to create fissured spots or patterns.

These spots the result in the design on the clothes, or Batik prints.

In our country, many people are engaged in Batik printing and they earn a good wage through this activity. Many sell these Batik printed clothes in the bazaars and receive handsome incomes. It is possible for anyone to make Batik prints and earn money through this trade. So, let's get ready to learn how Batik prints on cloths are made.



## Materials required to make Batik print

Two types of materials are needed to make Batik print. They are: 1. Fixed materials and, 2. Variable or raw materials.

#### 1. Fixed materials

Materials that can be used for a few consecutive years once they are obtained or collected are called fixed materials. You can find some of these necessary materials at your home as well. You will need an amount of money to buy the fixed materials at the onset of production. Now, we will learn about the names of the fixed materials.



Some of these materials are either available at hardware shops located in the sub-district towns' bazaars or at cooking utensil sellers' shops. The approximate total price of the materials is Tk. 2, 500. But you need not buy the things that are already available at your home. Depending on which materials you already possess, your actual expenditure on fixed materials may be lower than that stated above.

#### Current or variable materials

Variable or raw materials are vital in the process of making Batik prints. You have to buy the variable materials as per the need and demand of the job. It should be kept in mind that a few materials may not always be available at the shops. There are some specialized shops that sell certain special items. Some of these materials are nowadays available at the district level shops. We will now learn the names of the variable or raw materials needed to make Batik print.



Apart from the above, water, dyeing fixol etc is needed to make boutique print.

A family of 2 -3 members, along with paid laborers, can easily make Batik print on 75 sarees in a month. Single colored Batik print incurs less expenditure as opposed to multi colored Batik prints. In the same way, if Batik prints are made on some parts of a cloth as opposed to the whole cloth, the cost will be lower. In the table below, given are the names of materials that are needed to make two colored Batik print on 4 sarees using the Prussian method. The approximate price of materials needed to make Batik prints on 4 sarees is Tk. 2,000.

Materials	Amount	Materials	Amount
Tressing paper	Half meter	Washing soda	1 kg
Used newspaper	2 Nos.	Table salt	125 gram
Carbon paper	1 No.	Painting brush	2 Nos.
Pencil	1 No.	Cloth	24 meters
Eraser	1 No.	Detergent powder	1 kg
White wax	2 kg 400 gram	Robin Blue	200 gram
Brown wax	1 kg 200 gram	Kerosene oil	125 ml
Resin	600 gram	Prussian dye	200 gram

## Preparing the cloth to make Batik print

Before Batik prints can be made on the clothes, they need to be prepared. First, you have to wash the cloth thoroughly to free the gum from its surface. The dye stays better to the threads if the cloth is made gum free. The materials that you will need for this are:

Materials	Amount
Cloth	1 meter
Boiling water	2 liters
Detergent powder	1 tablespoonful
Washing soda	20 gram
Normal water	As needed

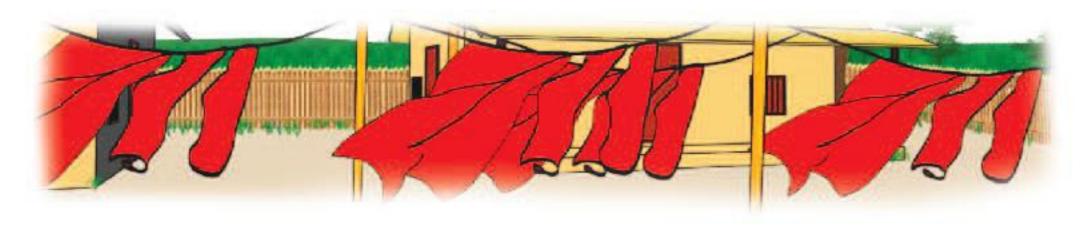
#### How to wash cloth

- Soak the cloth in normal water for 30 minutes.
- Wash the cloth.



- Bring to boil 2 liters of water in a cooking pot.
- Mix 20 grams of washing soda and a tablespoonful of detergent powder to it.
- Soak the cloth in it and stir thoroughly for 10 15 minutes.
- Bring the cooking pot out from the hearth. Cover the cooking with a lid and keeps it in that state for 30 minutes.
- Bring out the cloth from the cooking pot and wash it thoroughly with clean normal water.
- After that sundry the clothes.
- Now that the cloth is rid of gum, iron the gum free cloth.







## Drawing design on the cloth and waxing

We will now learn the names of the materials that are needed to wax the cloth, how to wax cloth and how to draw designs on a cloth. The materials that are needed to wax a cloth are:

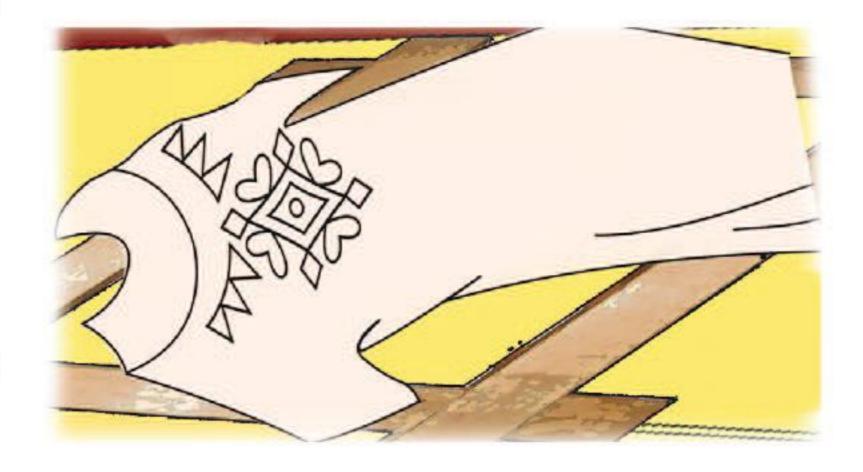
Materials	Amount	Materials	Amount
Pencil	1 No.	Honeycomb wax	125 gram
Carbon paper	1 No.	Resin	62 gram
Tressing paper	1 No.	Cloth	1 meter
Robin Blue	1 teaspoon	Brush	As per design
Kerosene	62 ml	Frame or pin	As per the measurement of the cloth
Design dice	As needed	Hearth or stove	1 No.
Paraffin	250 grams		

For making designs, pour the wax onto the design dice. In order to do so, you have to soften the wax first by heating it on a hearth until it gets half melted. Then draw the design you want on the cloth with the help of a pencil. You can also print the design using a carbon paper.



Perforate the tracing paper around lines of the design, drawn on the cloth, using a pin. Mix Robin Blue and kerosene oil together. Then, wet a piece of cotton pad of light cloth in that mixture and douse that on the tracing paper. This will result in a design on the cloth. If necessary, the design can be made more prominent with the help of a pencil.

- Now, lay the cloth on a table or on the floor, and pin it tightly so that the cloth gets stretched. You can also do that by putting a heavy weight on the corners of the cloth. If you want, you can also frame the cloth.
- Take 250 grams of paraffin, 125 grams of honeycomb wax, and 62 grams of resin in a cooking pot. Pour a teaspoonful of water into the mixture.





Put the cooking pot on a burning hearth or stove.
 Bring it down immediately after the mixture melts.



- Take out the molten wax, and slowly pour it to another pot. The wax would not blacken if you do this properly.
- Now, coat the design with molten wax lightly with the help of a painting brush.
- Use a blotting paper to remove wax if it drips. You can also remove the wax by pressing hot iron over it.

- After you have finished waxing the front side of the cloth, do the same on the opposite side after turning the cloth upside down.
- Now, reverse the cloth once more, and coat wax onto the front side of the cloth again like you have done ealier.





- You can also use a janting to coat the wax on the cloth instead of a brush. For that, place the janting's mouth directly on the design drawn by waxing.
- After waxing, keep the cloth at a shady place for at least 12 hours. Or you could also soak the cloth in water for an hour. You have to dye the cloth after the wax dries. You can either prepare the dye or buy it from the market.

## Dye preparation

You can buy many colorful dyes in the market. You can make it for yourself also. If you prefer to make dyes on your own, you have to buy 5 colors, viz. blue, yellow, red, purple and black. You can make new colors following the process mentioned below:



Which color mixing together		makes new colors
Red 2 times + Yellow 1 time	=	Red
Yellow 2 times + Red 1 time	=	Orange
Green 1 time + Yellow 3 times	=	Coffee color
Black 1 time + Green 1 time	=	Deep green
Blue + Yellow + Red	=	Crimson
Blue + Pink	=	Blackberry color
Purple + Yellow	=	Crimson
Blue + Red	=	Purple
Orange + Blue	=	Chocolate
Red + Yellow	=	Light brown
Orange + Yellow	=	Brown
Orange + Blue	=	Brown
Red + Orange	=	Reddish orange
Red + Purple	=	Reddish purple
Blue + Green	=	Peacock throat color
Red + Yellow + Blue	=	Chocolate
Orange + Green + Purple	=	Chocolate
Yellow + Sky Blue	=	Light green
Orange + Blue	=	Chocolate
range + Sky Blue + Blue + Yellow	=	Brown

## Dyeing cloth using Prussian method

Dyeing clothes using the Prussian method needs just nearly an hour. This job has to be done step by step. The materials that are needed to dye cloth in this method and how to do the job are mentioned below.

Materials	Amount	Materials	Amount
Prussian dye	12 gram	Bowl	1 No.
Salt	9 teaspoonful	Plastic bucket of large bowl	1 No.
Normal water	As needed	Hot boiled water	62 ml
Cloth	1 meter	Dyeing Fixol	12 gram
Washing soda	2 teaspoonful		

## How to dye using the Prussian Method

- At first, soak the cloth in normal water for 10 15 minutes.
- Make a mixture of muddy emulsion with 12 grams of Prussian dye and 62 ml of hot boiling water in an earthen pot or in plastic bowl.
- Pour the dyed water in a bucket where you will dye your cloths. Add normal water to the emulsion as needed so that the cloth is adequately immersed.
- Stir the cloth in the dyed water for 15 minutes.
- Take out the cloths from the bucket.
- Add 9 teaspoons of salt in that emulsion. Soak the cloths again in that dyed water for 15 minutes.
- Bring the cloth out from the bucket.

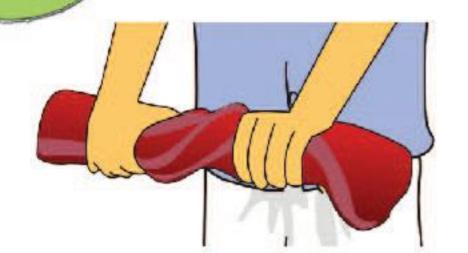






Add 2 teaspoons of soda into the dye mixture and stir well. Soak the cloth again in that mixture and keep it there for 15 minutes.

After that, stir the cloth and keep it there for 15 more minutes. Bring out the cloths from the mixture and rinse the cloths lightly.



Now, take as much normal water as needed so that the cloth can be kept well immersed. Add 12 grams of Dyeing Fixol in the water and mix it properly. Keep the cloth in the mixture for 30 minutes. Dyeing Fixol is used to make the temporary dye permanent.



Mentioned above is the quantity of materials required to dye a cloth measuring 1 meter long. The quantity of materials needs to be adjusted according to the amount of cloth to be dyed in the same ratio. You can dye a cloth two or more times in the emulsion if you want a commercial finishing. However, the brightness of the colors would be better after the first soak than the next two ones.

## How to remove the wax from the clothes

The wax should be removed from the cloth after dyeing. We will now learn how to remove the wax from the clothes..

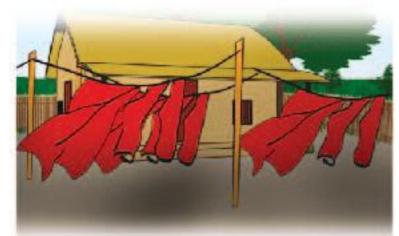
- Soak the cloth for 30 minutes in normal water to remove the wax from dried cloth.
- Continue washing the cloth in normal water for as long as the dye is seen coming off from the cloth. Take adequate quantity of water to do this. Wash the cloth repeatedly until the water runs clear.
- Take 3 4 liters of hot water in a cooking pot. Mix one fourth of a washing soap into that water and stir to mix.











- Put the cloth into that hot water when the soap is mixed. Boil the cloth for 10 – 15 minutes and stir a number of times. If all the wax is not properly removed, repeat the process again. After all the wax is removed, wash the cloth in normal water again.
- Dry the cloth at a shady place. The cloth will contain Gum in this state.
- After the gummed cloth is dry, iron it. Your Batik Print is now complete.

## Dyeing cloth in Vat Method

Only cotton cloth can be dyed in this method. The same methods for drawing designs, waxing and removal of wax as described above is followed here. Now, we will learn the names of the materials that are needed to dye a meter of cloth in Vat method. Next, we will learn how to carry out the dyeing job using Vat method. The materials that would be required to dye a cloth using Vat method are:

Materials	Amount
Cloth	1 meter
Vat dye	12 grams
Sulfuric acid	24 ml
Water	An amount of water where cloth can be submerged
Cooking pot or a large pot	3 Nos.

#### Dyeing cloth following VAT method

- Take some normal water in an earthen or plastic pot. Mix the dye in water.
- Take an amount of normal water in another pot where cloth can be submerged. Mix the dyed water with the water taken.
- Take in another pot the same quantity of water and mix 24 ml sulfuric acid with it.
- Now, dip the cloth into the dyed water and keep it there for 5 minutes to soak.
- Take out the cloth from the dyed water and then put it into the sulfuric acid solution.
- Imitate the process as mentioned above thrice (soaking the cloth in dyed water to the soaking in sulfuric acid solution cycle).
- After that wash the cloth in normal water.
- Dry it in a shady place.
- Remove the wax from the cloth following the method described earlier.
- Gum the cloth. Iron it after drying.

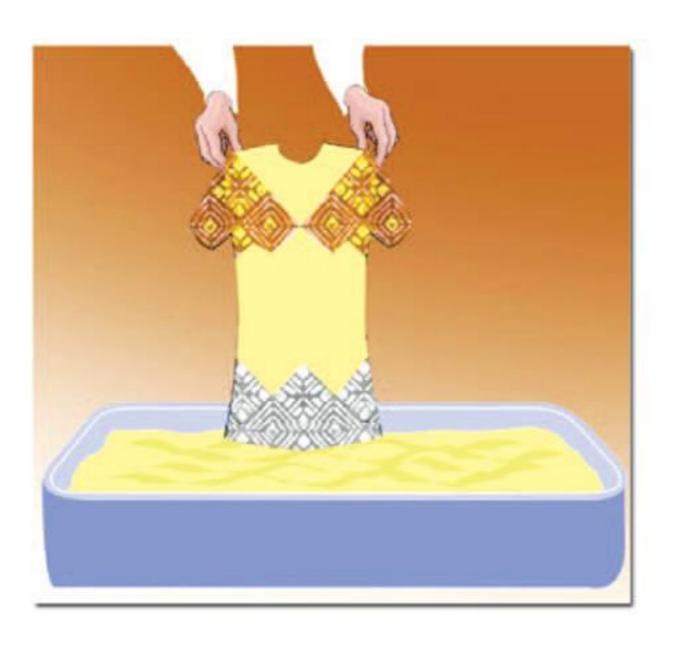
## Multi colored Batik print

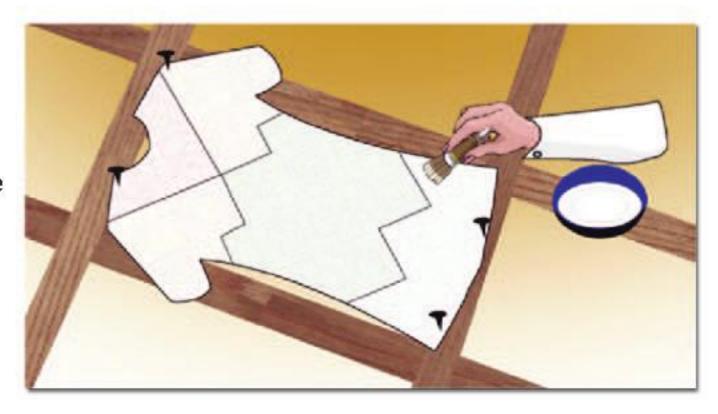
You can make different colored Batik print on cloth. If you want to dye the different parts of the cloth's design with different colors, you have to do it one by one. You have to dye another part of the design on the cloth after a dyed part dries. You have to put a light coat of dye, at first; and then darken the dye later.



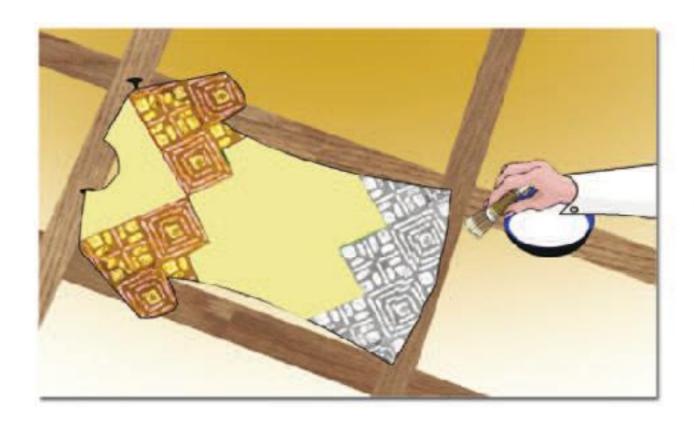
#### How to do the multi colored Batik print

- Let's say you would like to dye your cloth in four colors, such as, white, yellow, green and brown. First, draw the four colored design on a piece of white cloth.
- Then decide which color you would like to apply on which part of the design.
- Wax the part of the design that you want to retain blank. Keep the cloth in that state for an hour for the wax coat to get dry.

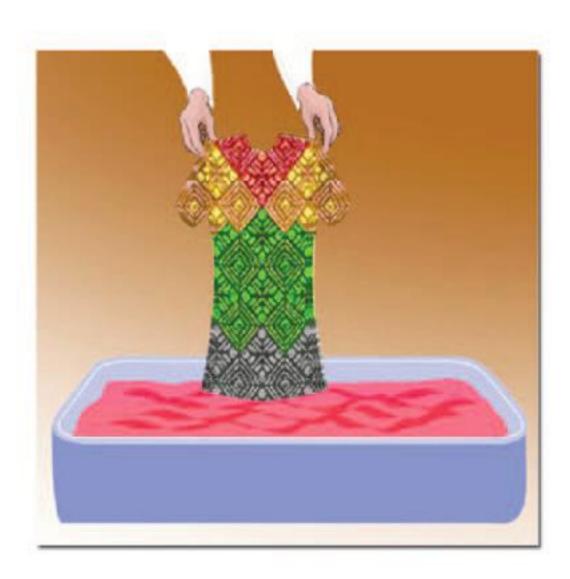




- Prepare the yellow dye next. Take 12 grams of Prussian yellow dye, 9 teaspoonful of salt and 2 teaspoonful of soda. Follow the process of Prussian dyeing method and dye the cloth yellow. This will make the entire clothe yellow.
- Dry the cloth in a shady place.



- Now, cover the part you want to keep yellow with coats of wax. You have to cover the white part of the design with the wax as well.
- Prepare the blue dye after mixing 6 grams of blue dye in water following the guidelines of preparing dyed water. Dye the cloth accordingly. This will give your cloth the color green.
- Now, cover those parts of the cloth with coats of wax that you want to make green. Similarly, you have to cover both the white and yellow part of the design with the wax.
- Prepare the red dye solution after mixing 6 grams of red dye in water following the preparation method of dyed water. Dye the cloth accordingly.





- This will make your cloth brown.
- Dry the cloth in a shady place.
- Remove the wax from the cloth following the guidelines of wax removal as described earlier. Following these processes, you can make four colored Batik print on clothes.
- Finally, gum the cloth and iron it when it dries.

## Making Batik print using direct painting method on the clothes with brush

You can make Batik print on different parts of your clothe using different colors using a painting brush and using direct painting methods. After you have completed painting on the cloth, you have to cover it up with wax after the paint dries well. Then, paint the next color and cover it up with wax in the same way. Following this process, you can paint and wax a number of colors. Now, we will learn the names of the materials needed to make Batik print on a meter of cloth using direct painting method and how to do it. The materials that are needed to make Batik print on a meter of cloth using direct painting method are:

Materials	Amount
Fine gum	½ teaspoonful
Different colored Prussian dye	6 gram
Urea	1 teaspoonful
Rezist salt	1 teaspoonful
Washing soda	½ teaspoonful
Water	1 cup
Baking soda (Sodium Bicarbonate)	1 teaspoonful
Glycerin	1 teaspoonful

#### Method:

- Draw the design on the surface of the cloth at first, and then mix the colors one by one. Now, paint the parts of the design as per your choice of color. Spread a newspaper under the cloth while painting. Dry the cloth in a shady place after coloring it.
- Next, cover all the painted colors with wax.
- After the wax gets dry, sink it in colored dyed water of another hue. By doing this, the base of the cloth will get another color.
- Remove the wax from the cloth and dry it and you will have a multi colored Batik cloth.

You have to soak the cloth in water for a day if you want to make Batik using fine gum. You have to be careful so that there is no crystal or grain in the fine gum. If you want to do it quickly, you can use Alginate instead.



## Dyeing cloth using Nepthol Method

If you want to dye your cloth maintaining a high standard, it is better to do it using Nepthol Method. Silk clothes are usually dyed and Batik printed in this method. But you can also dye cotton clothes using this method. Drawing design, waxing, wax removal etc has to be done as per the guidelines mentioned earlier. The dyeing process should be carried out very carefully. Make sure you are wearing gloves at all times when doing this. You have to protect your eyes as well. You need two pots to dye your cloth with nepthol. We will now learn about the materials that are needed to dye a cloth by the Nepthol Method are:

First pot		
Materials	Amount	
Nepthol – A.S.	1 teaspoonful	
Nepthol – B.S.	1 teaspoonful	
Monopal soap	1 teaspoonful	
Caustic soda	1 teaspoonful	

Second pot .		
Materials ·	Amount '	
Alumina sulphate	1 teaspoonful	
Sodium nitrate	1 teaspoonful	
Sulfuric acid	1 teaspoonful	
Nepthol dye GBC – chocolate, GC - orange	As needed	









## How to dye

- First, take a pot and mix Nepthol A.S. and Nepthol B.S. in it and add a teaspoonful of Monopal soap to create an emulsion.
- Then, take a teaspoonful of caustic soda and mix it with the emulsion. Boil the emulsion on a light flamed hearth or stove.
- Take the pot off the hearth and let it cool. After that strain the emulsion.
- Take the chemicals from the second pot into another pot and mix them well. Strain the
  mixture with the help of a thin wet cloth. The chemicals in the second pot are alumina
  sulphate, sodium nitrate, sulfuric acid and nepthol dyes.
- Soak the cloth that you want to print in normal water for 30 minutes.
- Soak the cloth in the first pot for 5 minutes and stir thoroughly. Now, bring out the cloth from the first pot and soak it in the second pot for 5 minutes. You will see how the colors begin to flourish.
- Repeat the process twice (soaking the cloth twice in both the pots). Take out the cloth from the second pot and dry it at a shady place for 24 hours.
- Now, boil the cloth in the soapy water for 10 15 minutes and stir well.
- Wash the cloth in normal water and let it dry in a shady place. Iron the cloth after it has dried.
- You can dye two more cloths, twice, in the same dyed water prepared by the Nepthol Method. But the colors of those clothes will be a bit lighter.

#### **Precautions**

You have to protect your eyes and wear gloves while working on your clothes using the Nepthol method. The chemicals should be mixed very carefully with the help of spoons. Caution should be taken so that the chemicals do not come in contact with your skin. The chemicals are caustic and can burn your skin.

## **Packaging**

Iron your clothes after the Batik print is complete. Fold them neatly and package them. The clothes will remain clean if they are packaged. Besides, a good packaging easily attracts people's attention, and you can get a good price.

## Marketing and sales

You can market and sell your Batik printed clothes in different ways. For example:

- Selling to both whole sellers and retailers.
- Selling to your neighbors.
- Selling at different fairs and bazaars / makeshift bazaars.

# Advantages and disadvantages of Batik print

Now, we would learn about the advantages and disadvantages of Batik prints

## Advantages

- This business needs a small set up
- A good profit can be generated with a small investment.
- The demand for clothes prevails round the year.
- Anyone can do this job irrespective of gender; and a family can do this at their home with their own paid labor.
- One can earn money also by teaching others how to make Batik print.
- It can be a good source of extra income.

## Disadvantages

- One has to go to the district headquarters (bazaar) to buy raw materials.
- The design requires a lot of attention.
- Wax should be coated on the designs very carefully for best results.
- There will always remain the risk of a fire outbreak.
- The workers are exposed to harmful chemicals and hot substances.





## Profit from making Batik print

Profit can be calculated after deducting the relevant costs of producing the goods from the amount received from selling the goods. The remaining money is the profit. This way we can calculate how much profit one can make in a month from Batik prints. A family of 2-3 members can do the job of Batik printing together. In a month, one can easily print colorful Batik designs on 75 sarees.

#### Fixed cost

We know that the tentative price of the fixed materials needed to make Batik print is Tk. 2,500. If we consider 20 percent depreciation of the materials per year, the cost of fixed materials in a month is	Tk. 42
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#### Current or variable cost

Raw materials purchase (75 saree and the cost of other raw materials)	Tk. 37,500
Total current or variable cost	Tk. 37,500

#### Total cost

Current or variable cost	Tk. 37,500
Fixed cost	Tk. 42
Total cost	Tk. 37,542

#### Profit

Sales of saree (75 saree @ Tk. 700 per piece)	Tk. 52,500
Total cost (fixed and current or variable cost)	Tk. 37,542
Profit from making boutique print in a month	Tk. 14,958

Over time, as your skills get better and your production quantity rises, the profit too will increase. Prices of materials fluctuate from time to time. This account is presented only to give you an idea. If you can buy tools and raw materials at a cheaper price then you will enjoy more profits.

#### Conclusion

From this manual we have learnt how to make Batik print. We learnt about the materials that are needed to make Batik print and the prices of the materials. We have also learnt how to market the Batik printed clothes. This manual will also help us understand the advantages and disadvantages of engaging in Batik prints. After learning all this, we can decide whether or not to involve with Batik printing. Anybody can do this business along with their family's cooperation. Apart from that, a group of people, after organizing themselves in a group, can also do this business.

#### Achievable competence

#### After reading this book, the readers:

- Would be able to say about the opportunities of the Batik print making as a small business;
- Would be able to say the names, amount and places of their availability and possible prices of the materials necessary to make Batik print.
- Would be able to explain about the techniques of how to: remove gum from a cloth, draw designs on the cloth, coating wax on the designs and removing the wax from the cloth;
- Would be able to explain the techniques how they can make colors n their own at home;
- Would be able to narrate the coloring techniques of clothes using Prussian Method;
- Would be able to explain the coloring techniques of dyeing clothes using Vat Method;
- Would be able to explain the multi coloring techniques of dyeing clothes using many colors;
- Would be able to explain the coloring techniques of dyeing on clothes using painting brush;
- Would be able to explain the coloring techniques of dyeing on clothes using Nepthol Method;
- Would be able to say what precautionary measures have to be taken during making Batik print;
- 11. Would be able to narrate the sales and marketing techniques of clothes;
- 15. Would be able to narrate the possible income and expenditure accounts of making Batik print.

Readers would be able to grasp the above mentioned competence more skillfully after watching the Batik print related animated video.