

**A STUDY OF SALTPANS IN MIRA-BHAYANDAR CITY**

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**Introduction:**

The study is been conducted on salt pans of Mira-Bhayandar city of Thane district. It covers an area of 79.4 square kilometer. Mira-Bhayandar is located on the threshold of Brihan Mumbai Metropolis. The total population of the city is estimated approximately 814656 the male population is more than female population which is 429,261 that is (53 %) and 380,119 that is (46%) respectively. In this city the population under 0-6 age years is 88016 that is 10%. Mira-Bhayandar city is demarcated natural water tanks which are spread out in different parts of the city and there are many salt pans located in this region. Salt pans are of two types Natural and man-made salt pans. When the water from the sea gets evaporated it leaves behind many minerals but salt is commonly rich amongst those minerals. As the city is located in vicinity to Vasai creek some of the salt pans have connection to Arabian Sea via Vasai creek.

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**Literature Review:**

**(Bugetyatri, 2021)** In this article “ Water Management techniques in saltpans of Uttan, Maharashtra.” the writer Neeraj Yadav states that Uttan is a calm village in the district of Thane Maharashtra it’s in the vicinity to his place he visits everyday Mira Road, Bhayandar and Uttan have good amount of salt pans across the region. There are two types of salt production which takes place one is where the water stored is not very deep and the other one is in shallow where the sea water is led in so that it can evaporate and salt is exposed. **(The Indian Express, 2022)** In the article “Mumbai: Only 150- acre salt pan plot has potential for development” the writer Neeraj Tiwari mentions that the previous BJP-SHIV SENA government took the survey salt pan land possible for development. Later then chief minister Davinder Fadnavis opens the plots for salt pan land parcel in the city. IAS Officer Manu Kumar Shrivastav states that according to him “Only plots close to eastern highway areas Nahur, Bhandup, Kanjurmarg, Mulund and Wadala have the potential for development. These plots are dry. However, plots in Thane, Malvani, Mira Road, Dahisar and Virar are still producing salt.” In the end from total 5300 acre of salt pan land 25 acres of the land was developable. **(The Times of India, 2013)** in the article “Railways eyes salt pan land for car depot” it states that a huge portion of salt pan land neighbouring to Mira road railway line is announced to be projected for the Churchgate-Virar grand passage so the western railway is keen to turning that 40 acres of salt pan land into a car depot. **(Gernedo Perillo, 2013)** The author of this article “Biogeomorphically driven salt pan formation in Sarcocornia- dominated salt-marshes speaks about how salt pans are under threats because of rising sea levels and rising motion of waves which is because of frequently change in climate. In this article they have used Biogeomorphically approach to check how impactful results generates and they got successful. Hence the saltpans were generated with the help of bio

geomorphic approach.

### Research Objective:

1. To understand the problems faced by female salt pan workers.
2. To analyses the health status of salt pan workers.
3. To study the physiographic and socio-economic conditions of salt pan.

### Research Methodology:

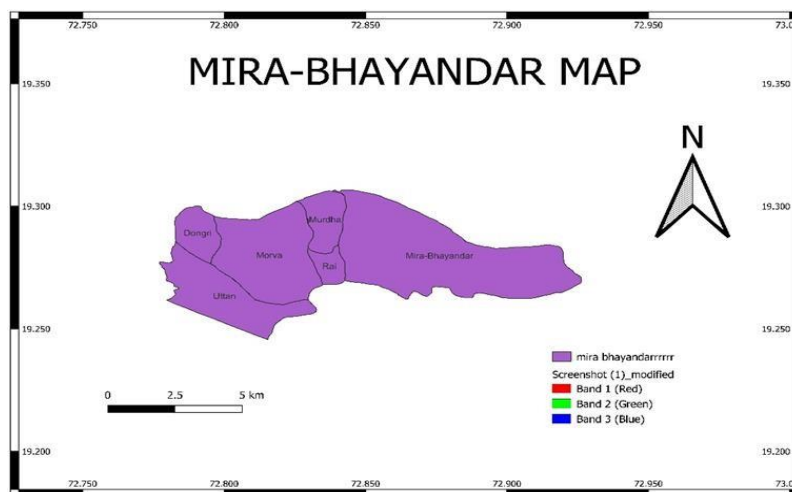
The research methodology consist of three parts and they are pre-field, on-field and post-field. We do this because we get clarity on our research.

**A. Pre-field:** Topic was selected which is study of saltpans in Mira-Bhayandar city and to explain the reason behind it proper data was collected from various researcharticle, newspaper articles, MBMC websites were included. As this study is based on primary data so a well drafted questionnaire was also prepared for primary datacollection for saltpans of Mira-Bhayandar city.

**B. On-field:** The on-field survey was organized in the Mira-Bhayandar city of Thanedistrict several visited were to be made after reaching the in different salt pan areasinteraction was done with the local people and with the owner and workers who worked in those salt pans. Questions were asked to each of them and honest answerswere recorded. The survey was conducted in the month of February 2022.

**C. Post-field:** The results obtained from the survey were stored, tabulated, accessed and analyzed. With the help of QGIS all the maps for the better representation. Limitations have been classify the results are interpreted with the apt conclusion.

### Study Area:



**Figure 1.1 Location Map of My Study Area**

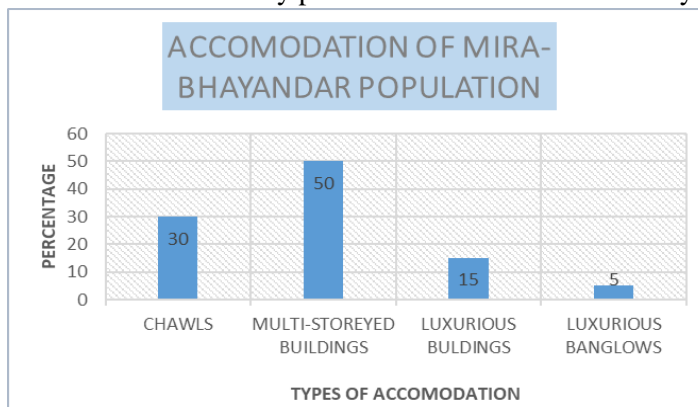
Mira-Bhayandar is a city in Thane District of Maharashtra state. It is manage by Mira- Bhayandar municipal co-operation that is (MBMC). It is also an integral part of Mumbai Metropolitan Region (MMR). According to census 2011 data the population of Mira- Bhayandar is 814657. In this city the large part of population is Hindu then next Muslim, Christian, Sikhs, Jain and others. Latitudinal and Longitudinal extent of the city is 19.2952° N,72.8544° E respectively.

Mira-Bhayandar is not a part of Mumbai because as we know India was ruled by British government but at that time the areas of Mira-Bhayandar and Vasai was ruled by the Portugusebut then afterwards when British confiscated the whole part the areas of Ghodbunder road, Bhayandar and Mira road was granted on lease for 999 years to Ramachandra Laxmanji in theyear of 1870 and the condition of the lease was to pay tariff of lumsum amount of 6,000 Indianrupees yearly. Hence it's still not under Mumbai.

TYPES OF ACCOMODATION	PERCENTAGE OF POPULATION STAYING IN IT
CHAWLS	30
MULTI-STOREYED BULDINGS	50
LUXURIOUS BUILDINGS	10
LUXURIOUS BANGLOWS	5

**Physical Background:**

Mira-Bhayandar the salt pans are all man-made and they produce natural raw salt first they



level the land the they make Embarkment and start making small blocks and then they make atunnel or Nalli through which they supply water into the blocks and all over the saltpans and they get water from Bhayandar Dhakka which is eventually connected to Vasai creek which is connected to Arabian Sea sometimes what they do is when there is **high tide** (They call it Bharti) they store all that water in that Nalli and then supply it through a tunnel and when the stored water gets over through the help of Pump they supply water in this way the salt is produced than they collect that salt and assemble it into small piles and the process goes on and on and in the Month of May they start collecting the small piles which they made and store it in one place and then salt workers start selling the salts to the manufacturer and in the market the MATKA community people store some amount of salt for themselves for the preservation of fish as they also do fishing because when the water comes in that Nalli or tunnel they have made a handmade long cone type basket which they call **MOKARI** they keep that MOKARI in the starting point of the Nalli so that it's easier to collect all the fishes which comes in that sea water. This MATKA community people are from Daman they belong to Gujarati community who eat fish and MACHI community people are the ones who only produce salt pans. The best time for it is summer season and the onset of monsoon they have to stop producing salt some of the Mira-Bhayandar people have shifted to different occupation so gradually the saltpans have not decreased and the economically also it is less fruitful to the people.



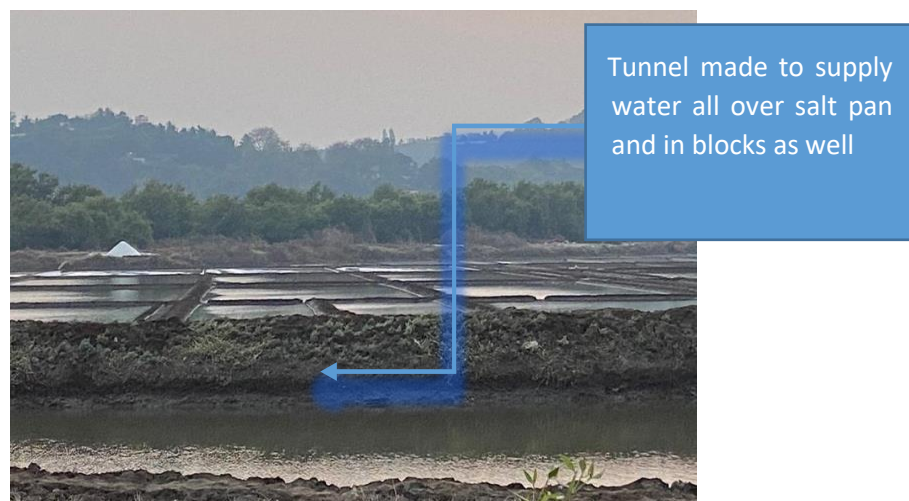
**FIGURE 1.2 BHAYANDAR WEST SALT PAN**



**FIGURE 1.3 MORVA SALTPANS**

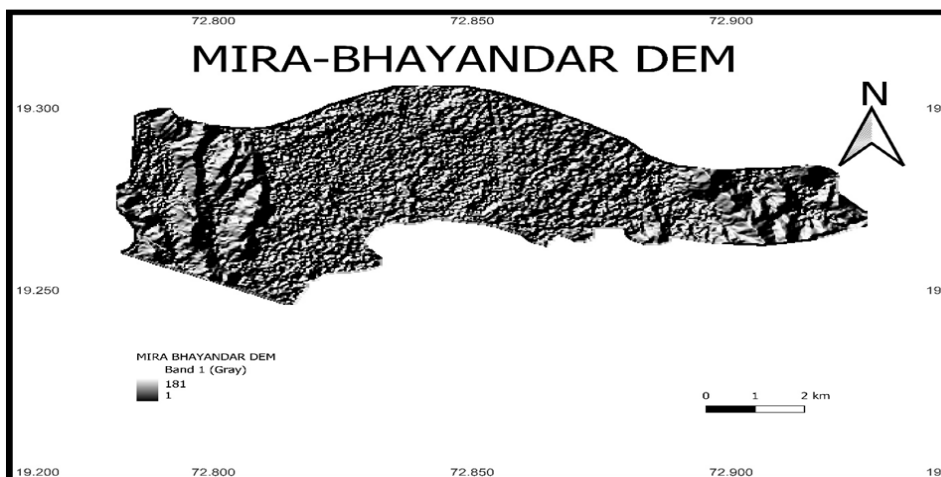


**FIGURE 1.4 BLOCK OF MORVA SALT PAN**



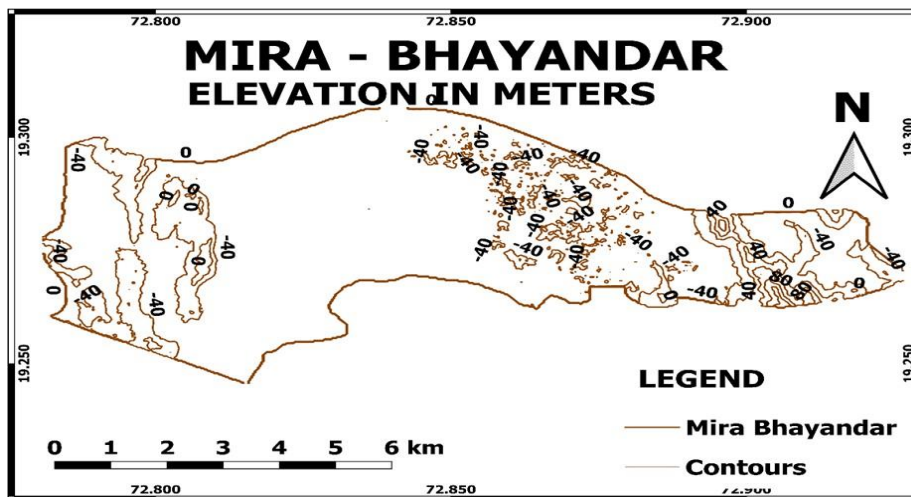
**FIGURE 1.5 MURDHA SALT PAN**

**PHYSIOGRAPHY OF SALT PANS OF MIRA-BHAYANDAR**



**FIGURE 1.6 DEM MAP OF MIRA-BHAYANDAR CREATED BY RESEARCHER**

In this figure 1.6 the left hand side of the map we can see it is very much elevated that means we have hilly area over there and in the middle of the map there is not much elevation can be seen over there our saltpans are located in plain area .In the extreme right hand side we can see its highly elevated because we have Ghodbunder road over there and that road is covered with hills and most accident prone area

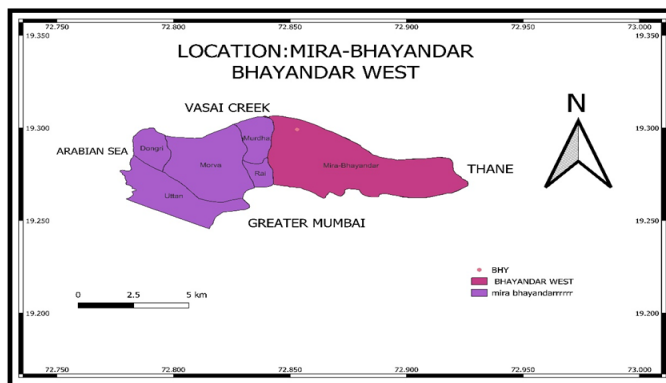


**FIGURE 1.7 CONTOUR MAP OF MIRA-BHAYANDAR CREATED BY RESEARCHER**

- SALTPAN OF MIRA-BHAYANDAR**
- BHAYANDAR WEST
  - MURDHA
  - MORVA

**LIST OF SALT PANS COVERED**

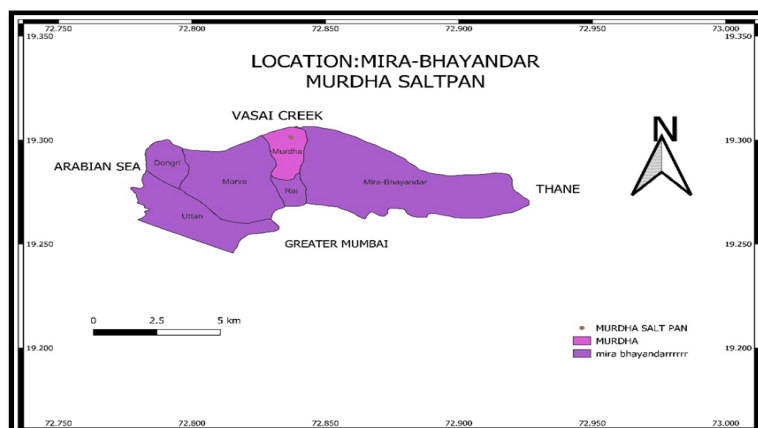
**1) BHAYANDAR WEST**



**SOURCE: Map created by researcher**

This salt pans are located on the plain land but the levelling of the ground is not the same the square shape blocks which they have created their depths varies one block depth is of 4-5 inches and the other has depth of 7-8 inches and they are not proper square shaped as well and some are them are levelled and made salt flats and they are concrete and they long and rectangular in shape and the border are made on rice grass so the winds don't hinder the water and salt is made proper now to form a salt it requires 25 degrees of water then only the salt will appear good and the particle of the salt will be large and the workers said that, "The larger the size of the particle the more the pure and good salt it is." It depends on the heat and wind but majority of the time the over there the quality of salt is less compared to the other three salt pans. Overhere only MACHI community people work who have shifted from Daman and came here. Onlytwo people follow their traditional business over here they are head workers and the plot is owned by someone else they have given it to them to produce salt.

**2) MURDHA**



**SOURCE: Map created by researcher**

Murdha is a small village and its located after Morva village basically Rai and Murdha are two consecutive small villages they have less density of population and people overthere are illiterate and they are only engaged in either fishing or working in salt pans inMurdha the salt pan area is also very small as compared to other two salt pans. As we can see in figure 3.3 the salt pans areas are located near the Vasai creek which eventually meets the Arabian Sea. In this the people are highly skilled when it comes to saltpans they have various types of manufacturers and sellers and some have made this their family business and they have kept. They don't have proper connectivity of transportation some who are well settle have their own vehicles and the others struggleswith government provided facilities which are not very much available and the hospitalsare also quiet far from the salt pan area. The great news is Naveen Merico Engineeringas taken the initiatives to broaden and improve the Murdha village and this has granted

by MMRDA. This project has its perks like the transportability will get stronger which means the roads will get upgraded.

**Temporary Accomodation:**

There

are variety of tools used for levelling removing the salt from salt pans and they also have small shelter in the middle of the salt pan where they store. They have small settlement build in row with 8-10 huts which are joined to each other and it's made of tad patra they have made this as their temporary accommodation as when the work load is more or when there is high tide to store water they stay over there with their family members or alone and when the work is done they move back to their houses.



This tool is used to check degree of water

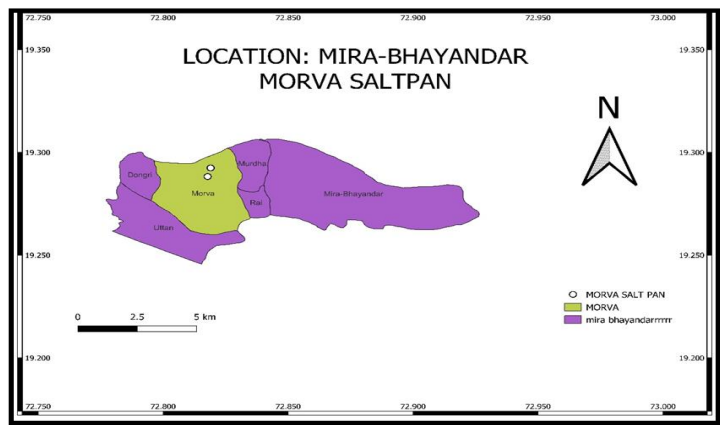
This is called Mokada this is used for levelling small blocks of salt pan



Shelter for tools

PHOTOS TAKEN BY RESEARCHER

**4) MORVA**

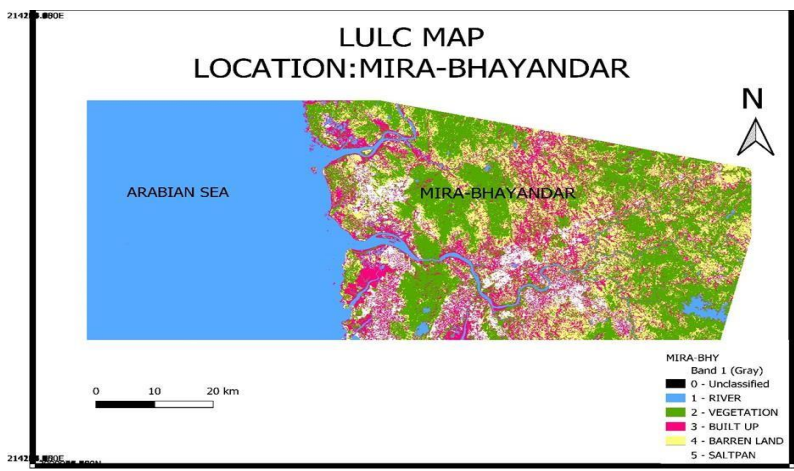


**SOURCE: Map created by researcher**

Morva is well developed amongst all the salt pans it has two major saltpan areas which are situated side by side. They have the good quality and large quantity of salt produced because they have a large area, good amount of workers, and they also have solar panels located which helps to provide them to get good salt pans because to make good salt it requires intense heat of sun and less wind and the climate is also favorable. The people who work in this salt pans are traditional workers; they have worked for generations. They sell the salt in whole sell market as well as to the local market.

The water supply for salt comes from Vasai creek but they also have bore well and the salt produced from bore well water is much more in good quality than that of Vasai creek.

**LULC MAP OF MIRA-BHAYANDAR**



This map is made with the help of QGIS software and the satellite imagery has been downloaded from USGS Globus. The location of the map is Mira-Bhayandar. As in the left side of the map we can see Arabian Sea is there and in the northern part of Mira-Bhayandar we have Vasai creek and in the right we have Thane.

Overall portion of the map is covered with Vegetation, Barren land, Built-up area, River and very few patches of salt pan area is visible.

In Mira-Bhayandar area. Mainly the middle portion and at extreme right hand side of the map we can see a lot of portion is covered with vegetation which is in green colour. In the extreme left hand side of the map near Vasai creek we can see small patch of areas covered with saltpan and it is scattered all over the southern portion of map and covered small areas and it is in white colour. Very few portion of barren land is found in Mira-Bhayandar and all over the map the barren land is visible on few parts and it is in yellow colour. The built up portion is very much visible near vegetation area in the middle part of Mira-Bhayandar and overall area built-up portion is very much visible over



around the map.

### **Major Findings:**

- The salt pan workers only work in salt pans for 3 months the peak time is the summer season that is the best time to grow salt and then they store it and sell salt to manufacturers.
- In Rainy season the salt pan workers go for fishing and they start selling fish in fish market of Bhayandar west every Sunday and to preserve fish they save some salt which is not edible so that they can use it here.
- The income of the salt workers depends on the climate if the climate is suitable and salt has grown good they make good income it fluctuates every year...
- The female workers are less as compared to male workers in this business.
- Salt pan workers don't get big amount of loan as their generated income doesn't guarantee the bank that they will be able to pay back the amount.
- Majority of the salt pan workers have done their qualification up till secondary, some didn't study further due to economic crisis some didn't want to study as they knew they are going to work in salt pans.

### **Statement of Problem:**

Mumbai is a coastal city with a diverse coastline. The bays, beaches, creeks notwithstanding, there are also mangroves and salt pans. According to the Mumbai Development Plan, 2034, there is a 5300 acres of salt pans in and around the city, with, out of which the current study area, in Mira Bhayandar, has a major bulk of it. Salt pans have been there for long period of time. Their presence has been a blessing to the coastal flooding problem of the Maharashtra coastline. The attempt in this study has been to study the relevance, geographical assessment of the pans and the socio economic study of the area. There has been a trend to redevelop the salt pans for the housing and other infrastructure for the area. This research is made to study how the saltpans are impacting people who stay nearby and the workers of salt pans how is their health impacted after working in the field of saltpans for long span of time

### **Recommendation:**

- Their wages should be increased because the amount of work they do is more in what they are receiving
- They should get proper gears to protect themselves
- They should get free health check-ups in every 6 months span of time
- Proper sanitation facility should be provided for female workers
- Female workers should get a leave for at least a year to get recovered after the child is born
- If possible that year time leave should be a paid leave

### **Conclusion:**

This study is conducted on salt pans of Mira-Bhayandar and the main aim was to study the salt pans. The study also emphasizes on the socio-economic problems and challenges faced by salt workers and due to their traditional occupation which has passed on to generations so they have no other option but to work in that field. The current study from which is cleared that due to traditional occupation, lack of education and knowledge and less financial stability the salt pan workers opt this occupation but they don't want their children to suffer in that manner so many of the salt pans are not functional and the other reason is that many of the people who own the land on lease from the government don't have proper documentation and many of the family members are not aware about their own land so their land is either confiscated by builder in illegal way or the government makes the use of it for their means.

The workers need other activities as well to run their livelihood only depending on salt pans becomes difficult and the amount of hard work and time invested in that is more and the wages they get are less and this occupation lasts only

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3 months of summer after that they are jobs so in that period they do other activities. Some of the people are happy for what they do and earn but some are not. After this study it is clearly seen that people who are in this occupation has not completed their schooling as they had no interest in studies, or lack of financial stability etc.

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