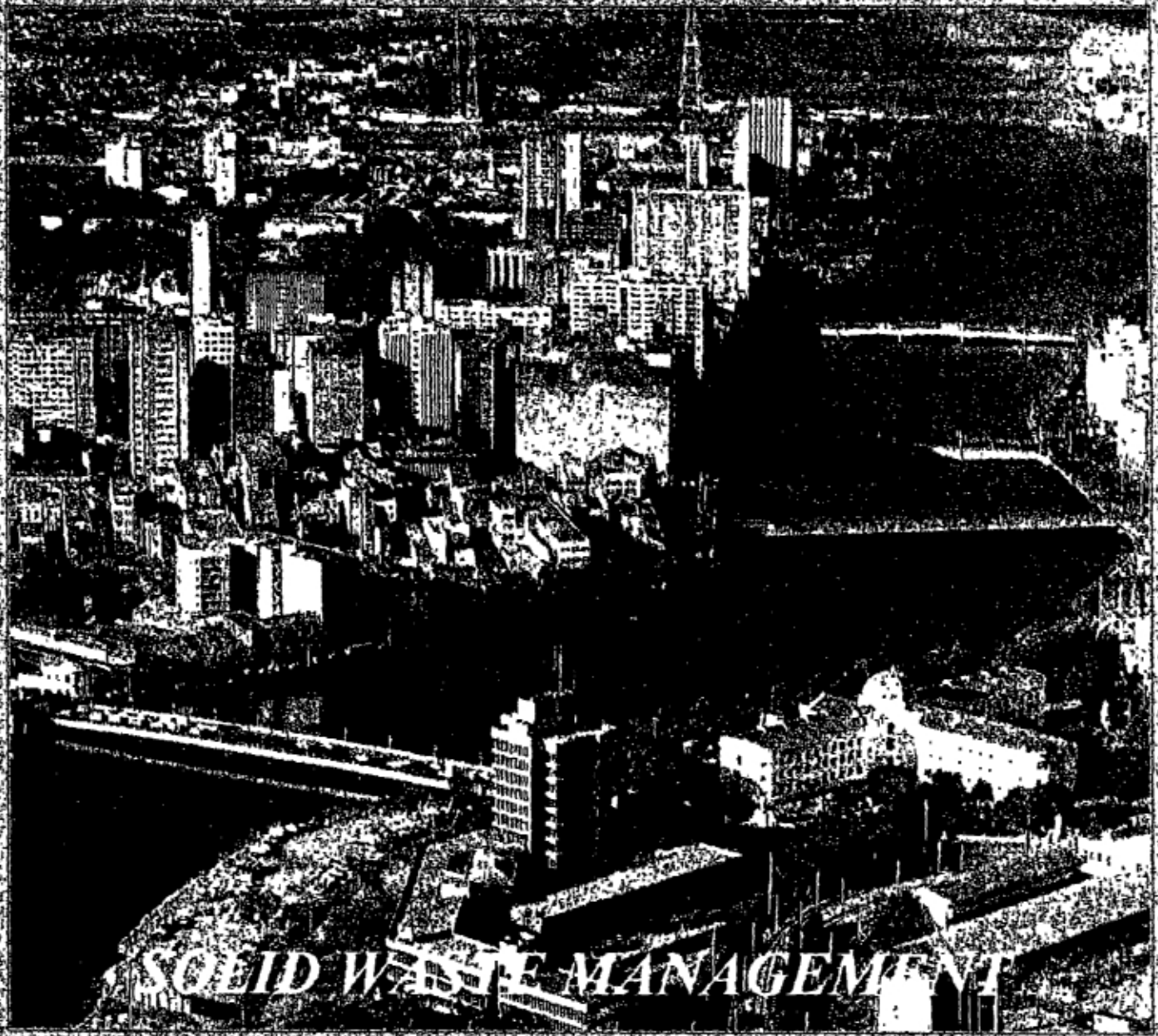


RECIFE 2000

PREFEITURA DA CIDADE



SOLID WASTE MANAGEMENT

MUNICIPALITY OF RECIFE
PUBLIC SERVICES SECRETARIAT

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CONTENTS

	EXECUTIVE SUMMARY	2
1.	BACKGROUND	3
2.	ENVIRONMENTAL MANAGEMENT	3
	2.1 INSTITUTIONAL FRAMEWORK	
	2.2 MAIN PROGRAMMES	
3.	SOLID WASTE MANAGEMENT PROGRAMME	5
	3.1 SELECTIVE WASTE COLLECTION PROJECTS	
	3.2 MAIN CONSTRAINTS	
4.	PROJECTS FOR FUTURE IMPLEMENTATION	9
	4.1 SOLID WASTE MANAGEMENT MASTER PLAN - Technical and Economic Study for Inorganic Solid Waste Management	
	4.2 IMPROVEMENT OF THE SELECTIVE SOLID WASTE COLLECTION AND RECYCLING PROGRAMME	
	4.3 HUMAN RESOURCES CAPACITY BUILDING PLAN FOR ENVIRONMENTAL EDUCATION	



EXECUTIVE SUMMARY

The purpose of this document is the presentation of the Solid Waste Management Programme of the municipality of Recife, aiming to the inclusion of the city in the Common Agenda Brazil-Germany for Environment. The initiative is settled by the municipal government and the Ministry of Environment, Water Resources and the Legal Amazony - MMA

The Programme of Solid Waste Management in Recife comprehends the Selective Waste Collection initiatives, which were started in June 1993 coordinated by the Municipal Public Services Secretariat through its Urban Cleaning and Maintenance Unit

It has been assisted by IRC - International Water and Sanitation Centre, non-governmental organization from Holland, responsible for its participation at the best practices selection of the Technical Advisory Committee-TAC of The United Nations. The Waste Management Programme of Recife was selected and presented in June 1996 at The Second United Nations Conference on Human Settlements - HABITAT II held in Istanbul, Turkey, as one of the 44 Best Practices

In June 1997 it was yet selected and published by the UN Department for Policy Coordination and Sustainable Development in New York, as one of the 30 new initiatives for sustainable development - (Sustainable Development SUCCESS STORIES - 30 New Cases)

The municipal work is characterized by the participatory structure for decision-making and social control on the institutional initiatives. The collaboration of national government level in the programme as well as the articulation of technical and financial support are important to strenght the sustainability of successfull initiatives which promote besides environmental impacts, socio-economical results reducing institutional operational costs, involving the private initiative for employment and income generation and local non-government organizations for citizenship promotion

Based on this work and its concrete results, the municipality of Recife takes the initiative of application for its participation in the Technical Cooperation and financial Support Programme from german government.

The document presents the several projects of the local solid waste management programme and its inherent constraints for implementation. It highlights the importance and the need of developing appropriate institutional guidelines for local environmental action planning

It also demonstrates how some physical structures must be provided for rational implementation of inorganic waste management, overcoming serious operational and economic problems, and for increasing the selective solid waste programme. Another very important aspect is the implementation of a human resources capacity building plan for raising the ecological awareness and for hygiene and environment education promotion

The mentioned aspects refer to the possible collaboration between the municipality and the German Government, through the MMA, as important elements for the sustainable development promotion and contribution to the local Agenda 21 in Recife



1. BACKGROUND

Recife is the capital of the state of Pernambuco, in Northeast Brazil. It has a population of approximately 1,300,000 and 220,22km². Population in the Metropolitan Region, 3,000,000 in 1991, has a rate of increase of 1.81 which is low when compared to other Brazilian cities. Unemployment is the highest among the six main metropolitan areas of Brazil. The delivery of services, and commerce are the most important economic activities. Although Recife has an unequal distribution of wealth and a large proportion of poor families, creativity for survival is high. The informal sector employs 53,2% of the working population and people undertake alternatives to formal development.

The city drainage is an environmental problem related to a lack of infrastructure and tidal influence. The problem is aggravated by the limited collection and treatment of domestic sewage (79%). Awareness on environmental problems is low. Contamination of water by waste and incidence of water related diseases are high, entailing high costs to the public sector.

Similar to most Brazilian cities Recife has serious financial problems. The municipal institutions therefore turn to social structures and community approaches as alternatives to public services. An integrated basic sanitation programme encompassing drainage, removal of sewage, urban cleaning and health promotion is implemented by a decentralized administration in order to reach sustainability.

2. ENVIRONMENTAL MANAGEMENT

The Urban Environmental Action Planning has been institutionalized. The coordination of joint planning and action have been developed in the past years. Infrastructural, health and education needs have been planned and put in practice through administrative integration and decentralization, under some guidelines:

- Self-reliance
- Coordination and Integration
- Legal Framework
- Training
- Data-collection
- Stakeholders participation
- Information dissemination
- Empowerment of local communities



2.1 INSTITUTIONAL FRAMEWORK

The municipal unit responsible for the coordination of the local environmental management is the Urban and Environment Planning Secretariat - SEPLAM. It plays a central role in a broad and participatory process for environmental action planning. It works as a spontaneous activity undertaken by the local authorities under pressure from and with the support of local community organizations, especially through a Municipal Council for Environment-COMAM with participation of the Municipal Health and Education Councils.

A Municipal Code for the Environment and Ecological Balance of the City, the New Law of Land Use and the Sanitary Municipal Code represent some initiatives to the implementation of a more effective environmental recovery and control. The definition of Special Zones for Environmental Preservation - ZEPAs and the regulation of the Special Zones of Social Interest - ZEIS (the city has over 600 slums) are also important steps for behavioural changes and support for the environmental management. The general local legislation responds positively to the control needs. Environmental awareness must be increased for its effectiveness.

2.2 MAIN PROGRAMMES

The environmental issues are managed by the main programmes what requires the systematic participation of most municipal institutions, especially for environmental education activities. The social framework and behaviour promote the conditions for strengthening the environmental recovery initiatives.

HEALTH CARE AGENTS PROGRAMME - PACS

Over 1000 Health Care Agents promote hygiene education and facilitate the access to health services. Orientation through door to door visits and research implementation has been decreasing the mortality and the incidence of water related diseases. The agents work in partnership with the Urban Cleaning and Maintenance Unit.

ADMINISTRATIVE DECENTRALIZATION PROGRAMME

The administrative decentralization involves all the municipal structure, in depth through the regional budgeting management. The programme is coordinated by the Urban Planning Secretariat. The city is divided into 6 Political Administrative Regions which are sub-divided in 3 Micro Regions, totalizing 18. The regional work promotes the integration among the different activities in a participatory approach putting in contact the different teams, CBOs, NGOs and community in Regional Units.

Local and regional planning activities are the basis for practical environmental education improving the ecological awareness through the participatory budgeting and the Government Plan implementation.



The municipalization of the health structure at national level, the implementation of the National Plan on Health and Environment and at local level the regional structure for health services, have also improved the conditions to build a broader approach to the environmental problems

PARTICIPATORY BUDGETING PROGRAMME

The Participatory Budgeting Programme coordinated by the Social Policies Secretariat promotes participation in the decision-making process and the systematic monitoring of the municipal initiatives. It deals with planning, implementation and maintenance of community priorities. Over 700 CBOs and NGOs are involved in the process, represented by about 200 regional delegates.

PILOT PROJECT FOR INTEGRATED ACTION ON HEALTH, EDUCATION AND ENVIRONMENT

The achievements of the municipality of Recife on the environmental management are due to the participatory process which contributes to the integration of the different agents. The above mentioned programmes are all conducted in a similar process, sharing successful experiences. Health, education or infrastructural services have the collaboration of the different secretariats, in order to overcome specific needs or constraints. New practices on urban environment management are developed for citizenship and human rights promotion.

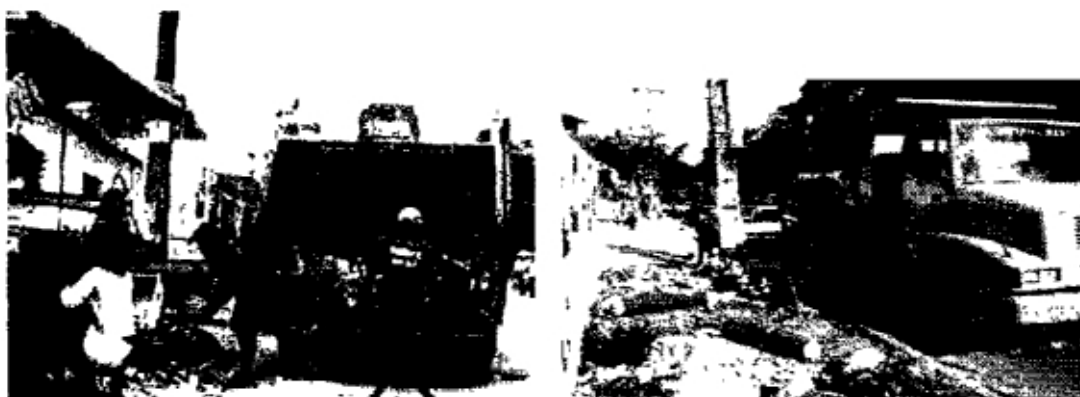
Regional teams working together on research, mobilization, implementation and monitoring activities result in the reduction of bureaucracy. Communication skills improve the creativity within the institutional structure promoting long term partnerships and commitment.

3. SOLID WASTE MANAGEMENT PROGRAMME

The Solid Waste Management Programme is coordinated by the Public Services Secretariat through EMLURB - Urban Cleaning and Maintenance Unit. Playing a multiple role in the urban maintenance, EMLURB contributes to a deeper integration among the different services. As mentioned, it is a relevant aspect in a city where drainage problems can be solved by waste collection regularly operated or by people behavioural changes concerning to waste disposal.

Special waste collection like the hospital and industrial wastes or the selective waste collection are managed by the public structure, as well as a small percentage (20%) of the regular domestic collection and cleaning services. Most of the services are indirectly implemented remaining to the municipality the role of fiscalization. The services involve about 3,000 workers.





The final disposal and treatment of solid waste in Recife is the dump site of Muribeca, located in a neighbour municipality, in Jaboatão dos Guararapes, at the metropolitan area. The garbage deposited on the site, has been treated by the municipality of Recife and amounts to approximately 5 000,000 ton.

Biological process has been initiated in march 1994 to increase the lifetime of the dump. The site was divided in 8 treatment cells, with liquidity and gas drainage and a biological reactor for accelerating the process. The two first cells have been concluded and closed, the third one is in use.

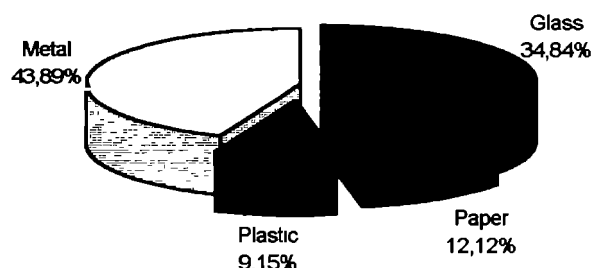
3.1 SELECTIVE WASTE COLLECTION PROJECTS

The programme, initiated in 1993, is subdivided in several projects: Selective Collection in Public Departments, with the motto "Our role/paper is to recycle" (in Portuguese "paper" and "role" are the same word); "Selective Collection in schools", "New glass again", and "Selective Collection in Condominia". These projects operate independently, while the other projects operate in an integrated fashion and work interdependently: "Voluntary Delivery Spots", "Communal Selective Collection" and "Support to Selective Collection by the Informal Sector".

The Voluntary Delivery Spots Project operates thirty four special containers for the segregated collection of recyclables. These have been placed mainly in high income neighbourhoods. The target is 40 more spots. Besides providing a means for the appropriate disposal of recyclable waste they have an educational purpose. Initiated by the local government, the project is gradually handed to the private sector through community based organizations. Only equipment maintenance and social monitoring remain public tasks.



Recyclable Materials Percentage



The Communal Selective Collection project is implemented in middle-low and low income neighbourhoods. To stimulate the separation of materials by the households, they are given the possibility to exchange the separated materials for food, mealtickets or construction material for a group's building. This exchange is made by each household individually or by a household collective. Priority is given to neighbourhoods with difficult access for conventional garbage collection. Local participation of especially women lowers the amount of garbage and the operational costs which in low accessible areas are relatively high. The project currently has 34 groups of which 57% led by women, involving 13 200 families. So far five groups are managing the full process. In all areas environmental pollution by garbage is reduced due to the high participation of the residents. Hygiene education is needed to avoid contamination risks in collection activities.

The project Support to Selective Collection by the Informal Sector is meant for two groups active in informal waste recycling: street pickers and cart-pullers (1500) and rag-pickers at the main city dump (500). Both groups are non or semi-qualified labourers mostly illiterate and without permits. Lack of access to job alternatives, low knowledge of occupational health hazards and a limited perspective and resources keep them from changing their job or working conditions. The project aims at improving the groups' situation based on their background and specific context. The project promotes more hygienic collection and sorting methods in the working places. Thereafter and depending on interest, the focus is on strengthening the associations and their contacts with the industries and liberating them from middlemen. Positive effects are an increased number of participants, reduced direct contacts with contaminated garbage, a reducing in number of dump sites and positive effects on the urban environment and expenditures related to waste collection.







The continuity of the initiatives undertaken by the Municipality together with the residents for the Selective Collection of Urban Garbage is ensured by a strong emphasis on environmental education and the high participation of CBOs and the private sector

The continued partnership between the public and private sectors is an element of the programme. In Recife, as in any other city, commercial interests should provide the continuity of this partnership. Assumptions are the recyclable materials will always be part of the urban waste, the industries will always be interested in having these materials and the involvement of the population will have a tendency to increase. The socio-economic characteristics of the population also to their interest in exploring various initiatives, as there is a lack of other opportunities for getting employment and earning and income in the short term. Another factor contributing to this interest the type of structure and the degree of informality of the local labour market

3.2 MAIN CONSTRAINTS

The high operational costs involved in the solid waste management in Recife have been reduced through indirect administration and strength fiscalization by communities and municipality. Thus the participatory approach and the involvement of the informal sector also contribute to the maintenance of better quality services. However, before initiating an Urban Environment Action Planning Programme in the municipality, some research must be carried out about the local environmental solid waste related problems and its potential solutions.

The difficulties which occurred in the informal sector project were caused mainly by the lack of management capacity building at the organizations level and by the strong price fluctuations in the market of recyclable materials

The solid waste management in Recife must be analysed and reviewed concerning the specific legal framework for people's behaviour improvement and control. The programme also has some atypical collection operations when compared to other cities. Inorganic waste collection (especially construction discard) amounts to approximately 38.000 ton per month on average. Transportation costs are very high (about US\$700,000 per month)



WASTE DISPOSAL AT THE CITY DUMP - Muribeca

Ton

Municipality	Average / Day	Average / Month	% TOTAL
Recife	2 649	58 376	83,4
Jaboatão	503	11.086	15,8
Others	21	465	0,6
TOTAL	3 173	69 927	100,

Source - EMLURB - Urban Cleaning and Maintenance Unit
 Obs - Circulant Population. 500,000 hab.

There is also a lack of communication skills and facilities for better working conditions. Some operational problems depend on human resources capacity building, focusing on some key aspects:

- Insufficient knowledge on the institutional structure (each other's tasks);
- Insufficient knowledge on the environmental context,
- Insufficient technical knowledge,
- Insufficient monitoring procedures

Other problems can be mentioned as the great number of slums (600) all around the city, its physical characteristics which demand alternative operational solutions and the financial difficulties to implement mass media for environmental education.

4. PROJECTS FOR FUTURE IMPLEMENTATION

The activities have been implemented with local resources. The participation of the Ministry of Environment, Water Resources and the Legal Amazon - MMA and the possibility of international collaboration, introduce the opportunity of accessing some support to overcome the mentioned problems

Some initiatives have been identified in order to contribute to the sustainable development perspective

4.1 SOLID WASTE MANAGEMENT MASTER PLAN

- Technical and economic study for solid waste alternative disposal and recycling

Before initiating an Urban Environment Action Planning Programme in the municipality, some studies must be carried out about the local environmental problems and the potential ways of solving them



A diagnostic of the main constraints in the operational procedures, the identification of the local potential private partners and the available urban areas for disposal, can orient in the perspective of recycling improvement and operational cost reduction. Technical collaboration is required to develop a Solid Waste Master Plan, defining the guidelines for action, determining priorities and longer-term measures

4.2 IMPROVEMENT OF THE SELECTIVE SOLID WASTE COLLECTION AND RECYCLING PROGRAMME

In order to increase participation and improve the results of the programme the support to the informal sector must be increased, as a means for developing all the other projects. The operational transference from the municipality to community and professional groups working with recyclable materials is a way to reduce waste generation and operational costs. The project Support to Selective Collection by the Informal Sector is an operational component of many other projects. To improve their working conditions and production, some alternatives have been discussed and started

The promotion of the recycling and trade of recyclable materials through management capacity building and operational facilities, can improve the environmental context by reduction of solid waste pollution in the urban areas and by reducing the presence of inorganic materials at the dump site in Muribeca, increasing its lifetime.

For all groups, communities (Communal Selective Collection Project) and cart-pullers in the streets or rag-pickers in the city dump (Support to Selective Collection by the Informal Sector Project) the municipality promotes the facilities through building **Recycling and Trading Materials Units**. The proposal is to implement six units in the administrative regions and one more at the dump site, involving sorting materials activities.

The initiative will benefit indirectly the population of Recife and directly the informal groups working in the city (about 2.000 families). The implementation of the units will be carried out into three more years.

At the city dump the municipality also aims to keep upgrading the surrounding area of 60 hectares. The project will be implemented into four more years.

4.3 HUMAN RESOURCES CAPACITY BUILDING PLAN FOR ENVIRONMENTAL EDUCATION

A critical understanding of the interaction between environment and development is crucial towards realising the goals of sustainable development. The main objectives are

- to strengthen the local institutional capacity to address the needs of sustainable development,
- to promote hygiene and environmental education.

The success of the solid waste management initiatives rely on institutional education and training for environmental awareness and capacity building on technical issues related to the environmental problems. The Pilot Project for Integrated Action on Health, Education and Environment represents a start point for a broaden capacity building programme.



Sistematic monitoring and analysis of the institutional activities in the sector, and the involvement of the Human Resources and Institutional Development Secretariat to conceive an alternative model for ecological perception and environmental education in a practical and permanent process

The main results expected from the human resources development initiative are the improvement of the environment in the low income target areas through adequate people's behaviour

As all education takes place within a dominant cultural, social and political context, any process on education for sustainability must recognize the greater social paradigm upon education. To reformulate the thinking and practice constraints some points and challenges have to be taken.

- a critique on education for *unsustainability*,
- the idea that education is only something that happens at schools,
- the predominance of decontextualized and abstract knowledge;
- the review of the utilitarian and anthropocentric values;
- alternative pedagogic models for environmental education

The identified need of training and the revision of some predominant patterns and paradigms for improving and replicating the experience demand besides of technical collaboration, some financial support. The awareness on the importance and priority of these subjects lead to the present proposals towards promoting the requested behavioural changes for sustainable development

The institutional capacity building initiative will be held into the next three years and environmental education must be implemented for one year of mass media and intensive work, remaining as an a permanent activity





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