

# Local Technology Provides a House for \$ 200

A house costing just \$200 has been designed to help solve the massive problem of homelessness in developing countries.

The secret of the low cost lies in the use of local building materials. The two-roomed house measures 3.5m by 4.5m by 2m high, and has an internal wall. Its walls are made of stabilised soil blocks, and the roof from fibre-concrete tiles.

The house has been devised by the London-based non-governmental organisation, Intermediate Technology (IT), and already some of this type have been built in Kenya and Zimbabwe.

The project holds out serious hope for the one billion people on earth who do not have a decent home. The \$200 price-tag does not include labour charges, since in Africa houses are often built communally with family and neighbours.

Another major advantage is that the house helps to preserve the African bush. A house built with bricks requires the energy equivalent of 20 trees to fire the bricks, but with the stabilised soil blocks, only half a tree is used.

For the roof, fibre-concrete roofing tiles (FCR) are used. They are quick and easy to make, using local materials. No firing is needed and cement content is limited.

Production of the tiles requires much labour but little capital. The tiles are light, durable and visually appealing.

Intermediate Technology has been busy promoting acceptance of FCR technology in Kenya at a policy level. It has also helped to establish small enterprises. About 100 workplaces have been created in Kenya to produce the tiles. To date, 1700 houses have been roofed with FCR tiles in a housing development site near Nairobi.

A house for \$200 may seem a far-fetched idea. But that is precisely what has been designed now. Intended particularly for the developing world, the house's building costs are kept very low by the use of local material and technology. As Gemini News Service reports, this could be a means of turning slums into revitalised living areas. by Marie Vander Elst

For the wallblocks, earth is used. It has many advantages as a building material: it can be easily compressed, it absorbs heat well and is slow to transmit it.

It cures readily, however, and is vulnerable to wind and water. Stabilisers are used to

make it more solid. Those include cement, lime, resin, bitumen, and, to an extent, natural fibres and dung. Stabilised soil blocks have a longer lifespan, which makes them an ideal building material.

Recommended for use in the house is the Kenyan man-

daleo stove, which is 40 per cent more fuel-efficient than the traditional three-stone fire. It also improves the environment by considerably reducing smoke emissions, which are major contributors to lung and eye diseases. In Kenya, some 500,000 households have

bought those stoves, costing only \$2 each.

"In each country houses have to be designed according to local conditions," explains Theo Schilderman, of IT. "You can build a cheap house using other materials. The actual design has to be done according to local opportunities. How we build the house varies quite a lot from one country to another."

Whichever way it is built, however, the house will not cost more than \$200.

The estimate of one billion homeless was made in 1987, the UN International Year for the Homeless. And the situation is not improving: it is predicted that the number of people homeless or living in unsanitary, unhealthy and overcrowded conditions will have doubled by 2000.

Billions of dollars of aid given to urban development programmes have not always been allocated to meet the needs of the poor.

An example of misdirected effort was the building in Ivory Coast of a replica of St Peter's basilica in Rome at the command of President Felix Houphouët-Boigny.

Despite the problems, the poor have proved resourceful in building their homes, using whatever they find, from flattened biscuit tins to panels wrenched from abandoned cars.

Western technology offers no real solution to the housing problem.

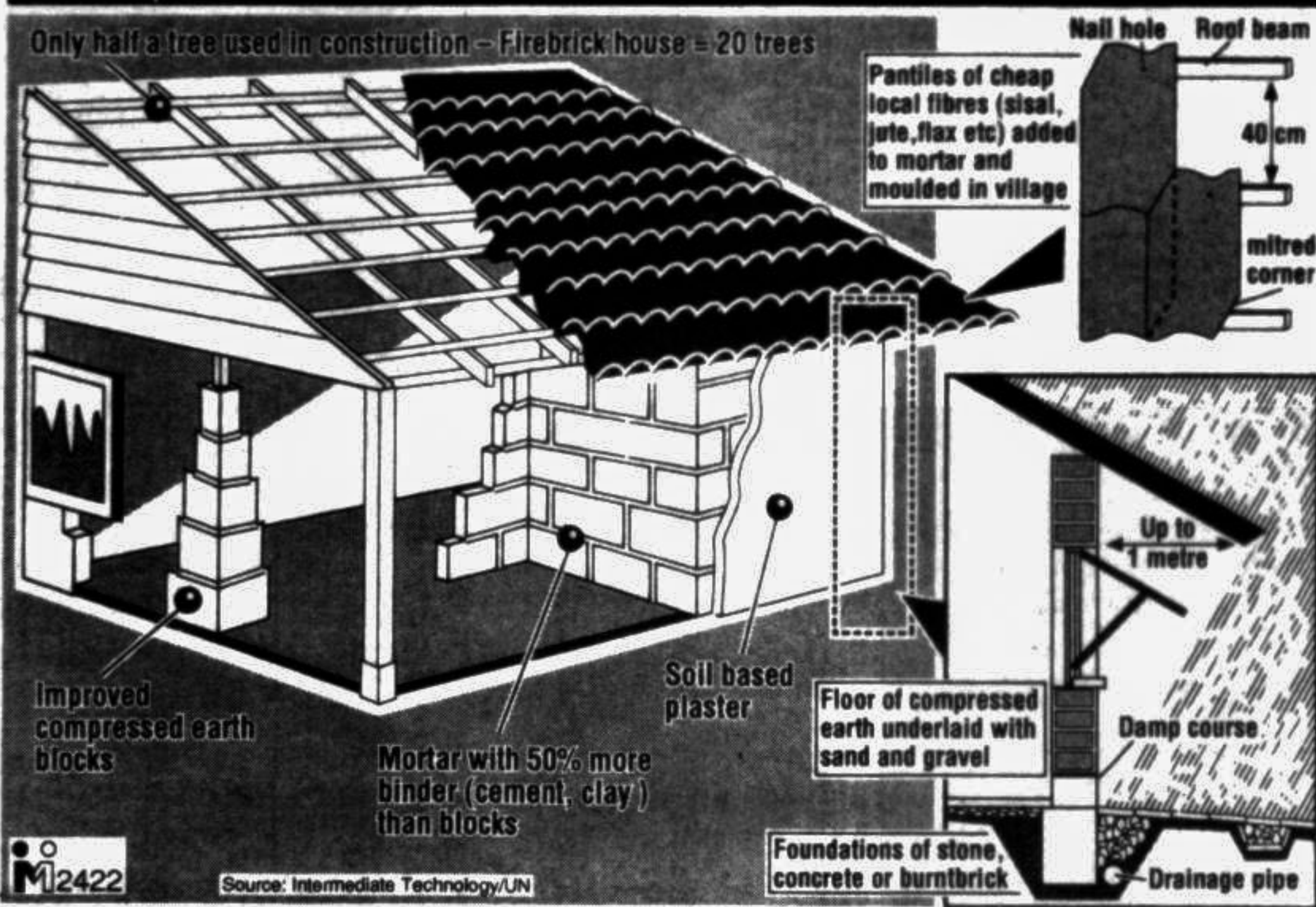
Local skills and local materials have to be exploited, and require minimal capital investment. That might be the major achievement of the \$200 home. — GEMINI NEWS

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Labour intensive rural public works provide jobs for many in Bangladesh. — Photo: ILO

## The \$200 home



In the squatter community of Orangi in northern Karachi, 36 per cent of couples practice or had used contraception. This is a much better rate than the national contraceptive prevalence rate in Pakistan, which is 11 per cent.

What's more, 90 per cent of Orangi's one million inhabitants were found by an evaluation study to be aware of the benefits of family planning.

Such awareness and acceptance came about indirectly, through a project to raise the settlement's standard of living. Under the project, a network of sanitation pipes was built and flush toilets were provided to some 50,000 families. Tree seedlings and vegetable seeds were distributed for planting.

As the project progressed, those involved — especially the women working in kitchen gardens — became keenly aware of how numbers affected their access to amenities. Plants and animals raised for food competed with people for water, living space and other scarce resources.

Thus, at the women's request, family planning information and services were made part of a health prevention programme for Orangi, one of Asia's largest squatter settlements.

The case study, described in the Population and Natural Resources Programme of the International Union for the Conservation of Nature, shows how "social investments" promote family planning, leading to lower fertility rates and smaller populations.

The project was cited by the United Nations Population Fund (UNFPA) in its report State of World Population 1991.

Investments in health, education and other social needs — aimed at promoting human,

Costa Rica, Sri Lanka, Jamaica and Botswana have health and education budgets four times greater than military budgets and have reduced fertility rates. by Ely Maniquis

## Social Services Lead to Reduced Fertility Rates

especially women's rights — also boost family planning targets, the report stressed.

It noted how even lower-income countries such as Costa Rica, Sri Lanka, Jamaica and Botswana have reduced their fertility rates through investments in social services. For example, all have health and education budgets that are four times greater than their military budgets.

Removing legal bias is a basic step. Said the report: "Equal protection under the law, including rights to divorce, the right to earn and keep money and to own and inherit property, raising the age of marriage and eliminating discriminatory marriage customs such as dowry or bride price reinforce respect for women as equals."

"They also reinforce women's self-respect, and widen their range of choices, including the choice to have or not to have children. Girls who have been brought up to regard themselves as equal to their brothers during childhood are more likely to adopt family planning as adults," it added.

A "most important conduit" for family planning services, said the report, are maternal

and child health services — which, however, are lamentably a low-budget priority in many countries.

It was to increase resources devoted to maternal health that the Safe Motherhood Initiative was launched internationally in 1987. The campaign targets a 50 per cent reduction in maternal deaths — sometimes as high as 800-1,000 per 100,000 live births in Africa and South Asia — in developing countries by the year 2000.

The link between the quality of health services and family planning acceptance is seen in Nicaragua and Sri Lanka, both of which have contraceptive prevalence rates of over 60 per cent.

With its participatory, community-based health programmes, Nicaragua now has maternal mortality rate of less than 50 per 100,000 live birth. The rate is less than 100 per 100,000 live births in Sri Lanka, where 85 per cent of deliveries are attended by a trained person.

Likewise, in 1984 when Botswana started an integrated maternal and child health and family planning programme, the number of medically su-

pervised births was 66 per cent and contraceptive use among married women was 16 per cent. In 1988, the figures had gone up to 77 per cent and 29 per cent, respectively.

"In some parts of the world it is the first visit to a clinic for a prenatal or postnatal checkup which presents the first opportunity to learn about contraception, and a well-attended delivery can provide the choice to contracept," the report explained.

It added that health services provide the means by which family planning acceptors get supervision and follow-up, "where they are able to discuss any problems and receive reassurance from a medical professional."

Also well-established is the relationship between education and fertility. For example, Pakistan has a female literacy rate of 21 per cent and a current annual population growth rate of 2.9 per cent. In contrast, Thailand with a female literacy rate of 96 per cent has brought down its population growth to 1.4 per cent annually.

Similarly, higher education seems to mean lower fertility. While Zimbabwean women who did not go to school have an average of seven births, those with secondary education and up have fewer than four.

UNFPA also calls the South Korean experience "particularly dramatic." Between the early 1960s and 1988, the proportion of girls completing secondary school increased from 25 per cent to 86 per cent.

During the same period, the number of women using contraceptives increased from less than 10 per cent to more than 75 per cent. Total fertility rates fell from 5.4 children per woman of reproductive age to below two. — Depthnews

WAJIMA CITY, Japan: When the snow flurry stopped a little before 8 am, tourists from nearby hotels began coming out to explore the Asa-ichi (morning open market) sprawled on each side of the main street of Wajima City.

Wajima is located on the Noto Peninsula of Ishikawa Prefecture in the middle of Honshu Island. The peninsula sticks out into the Sea of Japan like a big nose pointed toward the Asian continent.

Behind wooden handcars, women vendors in traditional work clothes catch attention to their wares — fresh snappers, wild yams, folk dolls, homemade pickles, among many others.

Attracting the biggest crowd was a quiet seafood stand where a plump middle-aged woman smilingly chopped steamed abalones and turbines, and filled the sampling trays with generous pieces.

A plate of three huge abalones costs, 10,000 yen (US\$73) and three medium sized ones, 6,000 yen (US\$44 at 3,500 yen (US\$25) per 100 grams.

A man with a heavy Osaka accent ordered two plates of abalone. A woman from Tokyo asked for a plate each of abalone and turbines, a kind of mollusk.

Although the price is comparable with those in Ohmichou market, the biggest retail market in Ishikawa, tourists seem to enjoy the food more in the setting of the Asa-ichi close to the Japan Sea.

Another characteristic sets off the Wajima morning market — it has been owned and operated by women for centuries. Ms. Katsuko Takunami, Director of the Ishikawa

Formerly hardy sea divers and now tourist-attracting market vendors, the women of seaside Wajima influence course of their city's economic life. Haruko K. Watanabe reports.

## Women Hold Reins of City's Economy

Prefecture Tourist Bureau in Tokyo, told Depthnews that Wajima has been famous for its women divers and their Asa-ichi. Since 1,400 years ago, girls starting in their mid-teens have been diving to support their families — husbands and sons hold the oars and emergency ropes while the women search the sea floor for shellfish and seaweeds.

It was said that only the female body, protected with sufficient fat, could survive the cold temperatures of the Japan Sea. Insulated diving suits were not known then.

Divers sold their day's catch in pushcarts to nearby villages. Later farm women joined in the vending.

Today the women operate the Asa-ichi every day (except for the 10th and 25th of each month) snow and rain notwithstanding. Snow and rain are in fact their usual weather except during summer, prompting the admonition that "you may forget your lunchbox but not your umbrella."

The popular Asa-ichi vendor, Chieko Ohtsumi, inherited her lot in the market from her mother-in-law, a widow who raised four children sin-

glehandedly by selling fish in the same market for 40 years. "I began diving for abalone near the Hekurajima Island off Wajima when I was 16 years old. I stopped diving at age 27 when my eldest son became three and needed more personal care," Ms. Ohtsumi said.

Two of her three sons help Ms. Ohtsumi buy and process the food items she sells. Her husband is the store's treasurer — by unwritten laws that still exist, men cannot work as vendors.

Tradition also dictates that it is the women who inherit the market lots. Before, they would come to the Asa-ichi at the early hour of 4.30 am so they could choose the spot they want to occupy.

"Fortunately, the lots are now allocated," said Ms. Ohtsumi who looks after the market as vice president of the Asa-ichi Cooperative.

The cooperative has currently 440 members. Sixty members

have retired without passing on their privilege to heirs, their young daughters having chosen office jobs rather than outdoor work in the harsh weather by the Japan Sea. "I may have 100 customers

today and only 20 the next day depending on the weather and tourism season, but I love to meet people from all parts of Japan and abroad," Ms. Ohtsumi said.

Meanwhile, hard work has paid the Ohtsumi family handsomely. Their annual sales volume averages 200 million yen (US\$1.46 million) which is about seven times more than that of a fish market in a local town.

Due to environmental changes in the Japan Sea, Ms. Ohtsumi could not obtain the foodstuff she sells from the area. The abalones are imported from the Tasmanian Island of Australia and the truffles from Korea. Ms. Ohtsumi sells 1,200 kg of abalone a month during summer and 600 kg monthly in other seasons.

As flights from major cities have been increased and a direct air route has been established between the Seoul and Komatsu airports, tourists have been increasing by 10 per cent annually in the last few years.

Without doubt, the women of Wajima will make good use of this opportunity to increase their economic power, and strengthen the age-old traditions of the peninsula. — Depthnews

MORE than in any other country, the women of Sweden have attained an employment status approaching that of men. Around 84 per cent of all working-age women now have paid work.

This is only 5 per cent below the comparable rate for men, and apart from the other Nordic countries, well ahead of the 50-70 per cent rates measured in most of the rest of Europe, Japan, and the United States.

Similar comparisons apply for pay per cent differentials. In 1990 Swedish women earned 90 per cent of men's salaries in the public sector, 82 per cent overall. For all but the oldest citizens, such conditions have helped relegate the term "housewife" to that of a curiosity of the past.

Nor does the arrival of children in the typical Swedish family mean a significant break in working life for mothers. Widespread provision of state childcare means that most women are absent from labour force for months rather than years.

Eighty-five per cent of women with pre-school children retain permanent jobs while raising a family. They can do this because of parental-leave conditions which greatly exceed those in other countries.

This is how it works: Carin Gullberg is a charge nurse in public hospital in the southern province of Scania. For the last 12 months she has exercised her right to be off work on full pay while minding her year-old baby girl. This is her second child, and her five-year-old boy has a place in the

register illness days so that these are not counted as parental care days.

In theory, and with optimal "spacing", a parent with four children could remain at home for ten years and receive wages for five of those years — all while retaining a protected position in the labour market.

that she would resort to another Swedish institution, the "daycare mother."

In this arrangement the community pays trained, registered childminders to look after up to five or six children at home. The quota may include the daycare mother's own children, although only one or two councils throughout the country are prepared to pay for "family".

In either case the cost of childcare for the Gullbergs will be heavily subsidised by the state. Fees to parents are related to income and very by region. In Carin's town of Trelleborg low income earners pay as little as \$100 a month for full time care for their first child and just \$25 for the second. For the highest income families the corresponding figures are around \$330 and \$35 respectively.

Access to childcare is a legal right in Sweden, and it is the government's intention that the entire pre-school population will be catered for by 1993. Currently more than 60 per cent of pre-school children over two years receive some form of care outside the home.

Professor Anna Christensen, of Lund University, has labelled this the "Factory Model" of childcare. In her words "care of children, as in all other factory organised activities, is

carried out in special localities, with special equipment and at special times, clearly removed from the home and private life."

The problem is, points out Christensen, that a few women have to look after everybody's children. They are as equally

trapped in "the woman trap" as ever they were at home.

While few in the community question the widespread practice of institutional childcare, researchers claim that children brought up in full-time day-care centres become better adjusted at school.

Typical of such views are the conclusions of Bengt-Erik Andersson, professor of educational and development psychology. He says research demonstrates that not only are nursery-raised children more creative and open, more socially forward and independent.

They are also more concentrated and develop more quickly their language and other skills. He claims: "Contrary to expectations, we haven't found any signs of negative effects, even for the very early starters."

However, despite the comprehensive childcare facilities and the generous parental and sick leave conditions, these are not enough in themselves to impel so many Swedish women into the workforce.

That is, women's work in Sweden also makes good economic sense from a household budget view. High relative pay, combined with fiercely progressive income taxes, mean that it has been more profitable in most households for women to increase their work hours rather than men.

The cloud on the horizon for many Swedish women is the prospect of European Community membership. They fear they have a lot to lose if their country's favourable labour market laws and generous parental leave provisions give way to the prevailing conditions of the community. — GEMINI NEWS

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## Swedish Women are Top at the Workplace

In Sweden women are now employed to almost the same extent as men. They also enjoy better wage parity than in any other country. It is a situation, reports Gemini News Service, made possible by the widespread provision of state-funded childcare, as well as a host of "parent friendly" laws.

by Norman Preston

community leks, or playcentre, for three hours each day.

Carin (or her husband if he chose) has three more months available on reduced pay which she will use now before returning to the workforce. If she so wished, Carin could have stayed at home for up to three years and her employment would have been protected by law.

During this time she also retains all her normal sickness benefit rights. If sick she can

However, Carin is now contemplating a return to full-time work. If she does she will follow the increasingly common pattern of placing her children in a full-time nursery run by the local council.

More than one quarter of all Swedish children have parents who both work full-time, and fewer than one child in ten have a mother who does not work at all.

If Carin wanted to work only part-time it is most likely

## Catching up on the men

