Mahaweli Authority of Sri Lanka

Proposed Alternative Strategy
For Land Development of the Settlement

Block 409 and 410
Zone 4 – system C

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And
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Israel Interests section.

Colombo.
Novembers, 1986.
Contents
Subject: System “C” – Blocks 409 & 410 ................................................................. 3
Project Area ........................................................................................................... 4
Location .................................................................................................................. 4
Access to the project Area ................................................................................. 4
Topography and land Capacity ........................................................................... 4
Climate .................................................................................................................. 4
Project Status and Existing Infrastructure facilities ..................................... 5
Proposed Development ....................................................................................... 5
Settlement planning Criteria ............................................................................. 7
Subject: System “C” – Blocks 409 & 410

A modification of the physical plans for Irrigation Blocks 409 and 410 of System “c” has been proposed that deserves serious attention. Historically, MASL has provided each settler family with 1.2 hectares (1.0 hectares of irrigable paddy land and 0.2 hectare for a non-irrigated homestead). The proposal for Blocks 409 and 410 envisages each settler family being provided with 0.4 hectare of irrigated paddy land, 0.4 hectare of homestead, laid out in such a way that a portion of the homestead might be provided minimal irrigation water in the future and, thirdly, a share equivalent to the net return from 0.4 hectare within a larger tract to be operated and managed as Commercial Communal Land (CCL). This will insure an immediate employment opportunity for the newly arrived settlers.

The proposed design requires no modification to the already designed main and branch canals and minimal changes in the distributor canal system. Further, the modified design permits for more clustered human settlements, and reduces the linear settlement pattern visible in the original plan where the settlement patterns were determined primarily on the shape and location of the above-command areas. Distance between homestead, paddy land and CCL is at a minimum.

By enlarging the homestead plot, the unit will take on greater economic viability and assist in resolving further needs for housing of second generation. This will be particularly true when irrigated water, in limited amounts (i.e., less than required for paddy) is provided to these lands for tree and horticulture type crops and for livestock. One goal is to make the homestead a greater income generating unit, that is has to date.

The seven larger contiguous tracts, ranging up to 190 hectares in extent, would be operated as commercial farms under community ownership. Currently, alternative techniques of management and organization are under review. For example, the CCL Lands within on irrigation block could be leased out by MASL to a commercial firm on a medium terms lease for a fixed annual rent. MASL then would distribute some portion of this rent as a dividend to the several shares – holders (settlers). Alternatively, and CCL’s could be operated by a Board who hire a manager and small staff on a salary and profit-sharing basis, with the Board, chaired by MASL, distributing annual or semi-annual dividends to the share – holders (settlers). In both instances, local settler families would be given employment preference and paid at the daily wage rate ascribable to that task in that local. These, and other possible organizational structures, will be analyzed.

The objective is to stimulate the development of agricultural lands that can produce surpluses for markets and agro-processing industries, increase rural employment opportunities, encourage crop diversification and intensification under commercial type management on the CCL’s including improved water management.
Proposed Alternative Strategy for Development of Settlement land under Mahaweli Programme

Project Area

Blocks 409 and 410, in Zone 4 of System “C” of the Accelerated Mahaweli Development area have been identified for development with the new farming system. This area will be referred hereto as the project area.

Location

The project area is bounded on the west by block 404, on the north by block 408, on the east by Hungamala Ela and on the south by Branch Canal No.2 of system C. Dehiattakandiya Township is located within the project area (see Map 1).

Access to the project Area

Access to the project area is from the Mahiyangana – Manampitiya MARD Project Rod which traverses the west boundary of the project area and the Dehiattakandiya – Aralaganwila road which traverses in close proximity to the southern of the project areas.

Topography and land Capacity

The project area covers a gross extent of 2596 ha, of which 66% is under command. The topography various from 85 m to 50m. the average slope is approximately 0.5%, and is in a northeasterly direction.

Soil surveys indicate that about 60% of irrigable land is suitable for paddy which the balance 40% is marginally suited for paddy and dry – food crops.

Climate

The climate in the project area is that of the dry zone and falls under the influence of both monsoons; north – east (December to February) and south – west (May to September). The annual average rainfall is 1800 mm to which the North – east monsoon contributes largely. The day time temperature varies between 24c & 30 Centigrade*.
Project Status and Existing Infrastructure facilities

The project area is presently under jungle cover except for a portion in the south – west sector where the Dehiattakandiya township is presently under construction.

The two main roads referred to earlier are under construction. The 33 KV electricity line traverses the western boundary of the project area. The Branch Canal No. 2 is also under construction with all works up to Block 410 being virtually complete.

The detailed and contour survey of the project area was completed by the Survey of the project area was completed by the Survey Department and handed over to the Mahaweli Engineering and Construction Agency. The Strip survey of distributor Canals is in progress.

The preparation of structure plans based on 1 ha. paddy and 0.2 ha. Homesteads per allotter is partially completed.

Proposed Development

The proposed development strategy for block 409 and 410 took into consideration the experience and shortcomings in the existing settlement areas. Various studies carried out have indicated that the present land use policy and pattern of land settlement need modifications, in order to overcome the many socio – economic problems in the settlement areas. Some of the identified problems are:

- Domination of paddy cultivation
- Non – Development of paddy lands In full;
- Insufficiencies of family labour for paddy cultivation of 1 ha.
- High water usage;
- Lack of irrigation water
- Under – development of home plots;
- Inadequate extents of home plots – (2nd generation housing problem);
- Limited employment opportunities;
- Low income levels
- Limited opportunities for medium and large investors;
- Varying agro – distances;
- The high costs for the provision of infrastructure facilities, such as water, electricity, etc;
- Limited marketing facilities;
- Insecurity due to limited banking facilities.

The systems proposed is to alleviate most of these problems without changing the already planned infrastructure facilities to the project area. I the proposed new strategy, the parcel of 1.2 ha. of land given to a settler family will remain unchanged. However, this 1.2 ha will constitute of 3 distinct portions of 0.4 ha. each as follows;

a. Homestead plot of 0.4 ha. (.15 ha. for buildings and 0.25 ha. for irrigated crops);
b. 0.4 ha. of low land paddy;
c. O.4 ha. of communal commercial land.

The objectives of the proposed system can be summarized as follows:

- To encourage more intensive land utilization by providing irrigation water to home plots.
- Due to ready access and security, it is expected that .25 ha. of home plot will be used for more intensive cultivation by farmers by providing greater attention to it;
- To consume less irrigation water and to maximize water use. (the paddy area has been revised from 1 ha. to 0.4 ha; while the water consumption in the home plot being low the over all water consumption will be lower than at present);
- To promote diversified agriculture through medium investors. This will open up new avenues of employment for present settlers as well as for present settlers as well as for those of the second generation;
- To assist in a solution to the problems of land for housing for second generation settlers;
- To fully utilize the available infrastructure facilities, such as towns, electricity, roads, etc.

The proposed development of each of the 0.4 portions of land will be as follows:

0.4 HA. of Homestead

The present extent of 0.2 ha. of Homestead has been found to be insufficient for successful farming. This extent is not sufficient to solve the problem of housing of the second generation. A homestead allotment of 0.4 ha. consisting of 0.15 ha. of building areas and 0.25 ha. irrigated land will be a solution to this problem.

By enlarging the extent of the homestead, it is possible to provide enough land for at least two housing units – the farmer and his son. In addition the provision of irrigation water to the homestead will encourage the farming family to do intensive cultivation within the home plot. The proposed road frontage of the plot will range from 30 m to 40 m and the suggested land utilization of a plot will be decided according to detailed agricultural planning.

0.4 Ha. Paddy Lot

Past experience has shown that insufficient family labour, shortage and high cost of hired labour and the insufficiency of irrigation water especially during the Yala cultivation season does not permit the cultivation of the full extent of 1 ha. of paddy land. However, the 0.4 ha. of paddy will provide sufficient paddy for the farmers own requirements while giving a surplus for save. It has become necessary to reduce the extent under paddy cultivation further in view of the anticipated self – sufficiency in rice and due to limited water resources.

0.4 HA. of communal Commercial Land (CCL)

Communal commercial land of all settlers will be allocated in one or more contiguous blocks and will be adjacent to the town centre or settlement area where the infrastructure facilities will be available. This land will not be physically divided among the settlers but not be physically divided among the settlers but each settler will receive a certificate for their ownership of 0.4ha of land and this may be mortgaged and offered as security to the medium investors or to a company by MASL on an annual rent basis with suitable conditions such as utilization only for diversified intensive agriculture while giving preference to settler
labour. The settler will annually receive rent for his allotment of 0.4 ha and a share of the profits of the company.

Proposed Development

On the basis of the above concept, 7 settlements with 1496 settlers are proposed for blocks 409 and 410. The summary of the land use is given below and detailed land use tables are shown in Annexes A, B, C.

<table>
<thead>
<tr>
<th></th>
<th>Block 409</th>
<th>Block 410</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of farmers</td>
<td>575</td>
<td>924</td>
</tr>
<tr>
<td>Paddy area</td>
<td>270.25</td>
<td>434.28</td>
</tr>
<tr>
<td>Home plot area - Buildings area</td>
<td>87.4</td>
<td>124.08</td>
</tr>
<tr>
<td>Irrigated area</td>
<td>142.6</td>
<td>245.52</td>
</tr>
<tr>
<td>CCL area</td>
<td>284</td>
<td>355.87</td>
</tr>
<tr>
<td>Others</td>
<td>116</td>
<td>172.2</td>
</tr>
<tr>
<td>Total gross area</td>
<td>900.25</td>
<td>1331.95</td>
</tr>
<tr>
<td>No. of settlement centres</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>No. of farms</td>
<td>575</td>
<td>924</td>
</tr>
</tbody>
</table>

Settlement planning Criteria

The average size of the proposed settlements would not be changed from the adopted size of 200 – 250 farming families which presently provide sufficient threshold population for the operation of basic infrastructure facilities. The size of settlement centres determined on the basis of the available surrounding net irrigable area which was arrived at by leaving out 17% of gross area for losses to roads, canals, etc. On this basis the highest number of settlers per settlement centre in the proposed development is 264. The lowest is 140, in which case it will be amalgamated with the other settlement without creating a separate settlement centre.

The present land allocation for the centres of settlement is 6 ha. 12 ha. and this will be reduced to 5 ha. in view to maximizing of land utilization. Past experience indicates that the land allocation for the centre is too large and about 55% of the area is not utilized and this area returns to jungle. Easy maintenance and operation is another advantage of the compact centres.
The length of the internal hamlet road network is minimized in the proposed system with 1 km of Hamlet road providing access to 37 – 45 farming families. The minimum width of the road was decided to be 10 – 12 m depending on ground conditions.

The proposed infrastructure facilities by the MECA such as roads, main and branch canals, village tanks etc. will remain unchanged in the proposed development. The distribution canal network which is presently being set out for strip survey will basically remain unchanged except for few diversions which are now necessary due to the provision of irrigation facilities for homesteads (see map 4).

The provision of irrigation facilities to the homesteads has been given priority in order to introduce intensive cultivation. It was found that most of the homesteads in the project area can be irrigated by gravity except a few land parcels, where the option is to have except a few land parcels, where the option is to have lift irrigation by pumping water. However, the above command areas are not taken for farmers homesteads but used for non farmers residential areas and forest reservations.

The dimensions of the homestead are also an important factor for the operation of a farm economically and the suggested average road frontage of the homestead is 40 m. 0.15 ha. homestead is recommended for housing areas and the balance 0.25 ha. of irrigable land is recommended for intensive agriculture activities other than paddy. The general arrangements of a plot will be as follows:

The type of crops that will be grown in the homestead and the quantity of water to be issued will be decided in detailed planning stage.

Attentions is also to be paid to conservation of forests and reforestation with economically viable trees such as bamboos which will conserve soil erosion and provide building materials. The forest cover along the unutilized sections of reservations along drainage, main roads and around village tanks should remain and it is also recommended to plant bamboo along the reservations of “D” canals. The lower areas along the drainages are not to be used as settlement areas and these will be allocated for paddy or grazing areas.

The communal commercial land is located adjacent to the town and settlement area where the infrastructure facilities are easily available About 230 ha. land near Dehiattakandiya town and another 410ha. near the settlement area are to be reserved a CCL land. About 20 ha. which is facing Aralaganwila road near the town have been retained for an experimental farm.

The proposed development was considered taking into consideration surrounding settlement pattern, anticipated town development regional context. It was found that Dehiattakandiya town is centrally located for both systems B and C and it has greatly benefitted by the internal road network within the Mahaweli areas. (see Map 5&6”). Therefore, there is a greater potential for further development.

However, it should be noted that the prepared maps for block 409 and 410 are in draft form and only for presentation purposes.

The second stage of planning has to be based on:
  a. Feed back of survey and investigations in the area with proposed settlement location:
  b. Final tract traces of distributor canal network within the proposed divisions:
  c. More detailed agricultural planning
In order to achieve the above, it is very necessary to establish a multi-disciplinary planning team in the MASL comprising Physical planner/ Town Planner, Agricultural Economist, Civil Engineer, Water Management Specialist and part time services from other disciplines such as Financial Planners, Sociologist, Soil Scientist and other supporting staff such as Surveyors etc. in order to prepare detailed plans for implementation.

Implementation Schedule
The major project development activities indicating their phasing over time are scheduled in a summary form in the annexure E. The responsibilities for the implementation of project development activities will remain unchanged.

Cost of the Project
The estimated development cost per settler based on preliminary expenditure estimates is Rs. 31,100/= per famer. This amount comprise the homestead development partly irrigated, village centre buildings and irrigated paddy land. In addition to it, with complete development of communal commercial land the expenditure raised by Rs. 7400/- (approx.) per farming family and total cost of the development was estimated as Rs. 38,500 per farming family.

All these estimates are based in on preliminary data and does not include the cost of Main Roads, Main and Branch Canals, “D” Canals, water supply, electricity, settler housing and town development.

Land Use Table - block 410

<table>
<thead>
<tr>
<th>Settlement Centre</th>
<th>No. of Farmers</th>
<th>Homesteads Area (ha)</th>
<th>Paddy Gross areas (ha) (.47)</th>
<th>C.C.L (ha)</th>
<th>Area (ha)</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Buildable area (.15)</td>
<td>Irrigable area (.25)</td>
<td>Irrigable</td>
<td>Above Command</td>
<td></td>
</tr>
<tr>
<td>6 H 8</td>
<td>220</td>
<td>33</td>
<td>55</td>
<td>103.4</td>
<td></td>
<td>17.8</td>
</tr>
<tr>
<td>6 H 10</td>
<td>225</td>
<td>33.75</td>
<td>56.25</td>
<td>105.75</td>
<td></td>
<td>16.8</td>
</tr>
<tr>
<td>6 V 11</td>
<td>265</td>
<td>39.6</td>
<td>66</td>
<td>124.08</td>
<td></td>
<td>23.5</td>
</tr>
<tr>
<td>6 H 12</td>
<td>215</td>
<td>32.25</td>
<td>53.75</td>
<td>101.05</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>925</td>
<td>138.6</td>
<td>231</td>
<td>434.28</td>
<td></td>
<td>76.1</td>
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</table>

Village are Utilization table - Block 410

<table>
<thead>
<tr>
<th>Settlement Centre</th>
<th>No. of fam</th>
<th>Homestead (ha)</th>
<th>Roads (ha)</th>
<th>Canals (ha)</th>
<th>Settlement Centre (Ha)</th>
<th>Non Farm area (ha)</th>
<th>Other Total (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 H 8</td>
<td>220</td>
<td>88</td>
<td>220X.27X12</td>
<td>7.1</td>
<td>220X.26X10</td>
<td>5.7</td>
<td>17.8</td>
</tr>
<tr>
<td>6 H 10</td>
<td>225</td>
<td>90</td>
<td>225X.27X12</td>
<td>6</td>
<td>225X.26/10</td>
<td>5.8</td>
<td>16.8</td>
</tr>
<tr>
<td>6 V 11</td>
<td>264</td>
<td>105.6</td>
<td>264X.27X12</td>
<td>8.5</td>
<td>264X.26X10</td>
<td>6.9</td>
<td>23.5</td>
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</table>
### Village are Utilization table - Block 409

**Zone 4 - System C**

<table>
<thead>
<tr>
<th>Settlement Centre</th>
<th>No. of farm</th>
<th>Homestead (ha)</th>
<th>Roads (ha)</th>
<th>Canals (ha)</th>
<th>Settlement Centre (Ha)</th>
<th>Non Farm area (ha)</th>
<th>Total area (ha)</th>
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</thead>
<tbody>
<tr>
<td>6 V 5</td>
<td>140</td>
<td>140X0.40</td>
<td>56</td>
<td>140X.27X12</td>
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<td>6 H 6</td>
<td>215</td>
<td>215X.40</td>
<td>86</td>
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<td>7</td>
<td>215X.26/10</td>
<td>18.5</td>
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<tr>
<td>6 H 7</td>
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<td>220X0.04</td>
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<td>215X.27X12</td>
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<td>18.6</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>56.5</td>
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### Land Use Table - block 409

**Zone 4 - System C**

<table>
<thead>
<tr>
<th>Settlement Centre</th>
<th>No. of Farmers</th>
<th>Homesteads Area (ha)</th>
<th>Paddy Gross areas (ha) (.47)</th>
<th>C.C.L Area (ha)</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Buildable area (.15)</td>
<td>Irrigable area (.25)</td>
<td>Irrigable Above Command</td>
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<tr>
<td>6 V 5</td>
<td>140</td>
<td>21</td>
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<td>6 H 6</td>
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<td>6 H 7</td>
<td>220</td>
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<td>55</td>
<td>103.4</td>
<td>182</td>
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<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>102</td>
</tr>
<tr>
<td>Total</td>
<td>575</td>
<td>86.25</td>
<td>143.75</td>
<td>270.25</td>
<td>182</td>
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<tr>
<td></td>
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<td>102</td>
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### Highlights of the Implementation Schedule

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<tbody>
<tr>
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<td>3</td>
<td>4</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
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</table>

- Detailed & Contour Survey
- Structure plan Preparation
- & Detailed Planning
- Market Roads
- settlement Centres
- Buildings
- Village tanks
- Jungle clearing
- Distributor of CCL Developers
### Settler Selection

### Settlers placement

### Communal commercial land Development

### On farm Development

#### Communal Commercial Land

**Blocks 409 – 410**

Estimated Expenditure for

**The Whole C.C.L.**

<table>
<thead>
<tr>
<th>Description</th>
<th>Area</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bush Clearing - Mechanical</td>
<td>320 Ha</td>
<td>3,000,000</td>
</tr>
<tr>
<td>2. Bush Clearing</td>
<td>320 Ha</td>
<td>1,300,000</td>
</tr>
<tr>
<td>3. Agricultural Development for irrigation involves command</td>
<td>510 Ha</td>
<td>1,275,000</td>
</tr>
<tr>
<td>4. Agricultural Development above command by pumping water from canals using for gravity and pipe irrigation</td>
<td>130 Ha</td>
<td>1,950,000</td>
</tr>
<tr>
<td>5. Agriculture facilities tractor sheds, storage, workshops, Packing, administration</td>
<td>1000M2</td>
<td>1,500,000</td>
</tr>
<tr>
<td>6. Electricity supply</td>
<td></td>
<td>750,000</td>
</tr>
<tr>
<td>7. Access roads supply</td>
<td></td>
<td>900,000</td>
</tr>
<tr>
<td>8. Field ways</td>
<td></td>
<td>300,000</td>
</tr>
</tbody>
</table>

| Total                                                                      |          | 10,975,000|

Approximate 11,000,000 :: 640HA = Rs. 17,200 per ha.

#### Expenditure Summary

7 Villages & village centres

- **Total: Settler Families**: 1496
- **Including N.F.F. in the villages**: 74
- **1570 Families**

- **1796 farms x 31.150 Rs.**: 46,600,000
- **Community Commercial land**: 11,000,000

| Total                                                        | 57,600,000 |

57,600,000 :: 1496 = 38,500 per Farm Family

= 38,500