Sdao Kong Irrigation Scheme Farmer Water User Community

Activity report and request for financial support to MOWRAM

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*Report written with the technical support of*

 *the Irrigation Service Centre*

*in Kompong Thom*

1. **Sdao Kong scheme background**

The Sdao Kong scheme originally built during Pol Pot period was rehabilitated in 2004 by MOWRAM with financial support from the French Embassy. The FWUC was created the same year with the technical support from CEDAC and was officially recognized by MOWRAM on 9 August 2004. It was also recognized earlier by Prey Veng province authorities, Ba Phnom and Kompong Trabaek districts authorities and Prey Veng PDOWRAM on 24 June 2004

Table 1: Sdao Kong scheme location and beneficiaries

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Districts | Commune | Village | Planned | Season 2009-2010 |
| Irr. area (ha) | Families | Irr. Area (ha) | Families | %age |
| Ba Phnom | Sdao Kong | Phum Thmey | 94.32 |  | 81.95 | 40 | 87% |
| Tung Neak | 44.12 |  | 3.00 | 3 | 7% |
| Kompong Trabaek | Kompong Trabaek | Kroch | 110.08 |  | 20.41 | 28 | 19% |
| Kansom O | Kompong Svay | 52.48 |  | 23.55 | 22 | 45% |
| 2 | 3 | 4 | 301.00 | 232 | 128.91 | 93 | 43% |

Sdao Kong irrigation scheme is a pumping station system. Two 65HP pumps feed one primary canal (4520 m) and 15 secondary canals (500 m / canal) that were planned to irrigate 301 ha of land. The system allows irrigating during two seasons: the dry season after inundation recedes from November to February and the early wet season from April to July.

The FWUC now faces specific budget difficulties and cannot finance the pumping costs for the coming dry season. The purpose of this report is to ask MOWRAM financial support to pre-finance the coming dry season operations.

1. **FWUC operations and ISF levels from 2004 to 2010**

During the 3 first seasons (2004-2006, see table below), the FWUC received support from MOWRAM in the form of diesel for the pumping operation. In the mean time, the ISF was progressively increased from 70,000 KHR to 120,000 KHR (~28.9 USD) as planned by the project. However the ISF continued to increase later on up to 200,000 KHR above the expected level due to the reduced cultivated area and supplementary costs for the scheme functioning. This decision was taken by the farmers without external advice.

In the part of the primary canal, the farmers have to pump water from the primary to the secondary canals. Due to higher pumping costs, it was agree that those farmers would pay an ISF of only 50,000 KHR and later on it was increased to 80,000 KHR.

In the dry season 2008-2009 (season 6), the ISF was decreased to only 50,000 KHR, because there was nearly no pumping at all during that season due to important rainfalls. This was an exceptional situation.

In the current early wet season 2010 (season 9), the ISF has been reduced to 50,000 KHR, because farmers have to provide the fuel directly for the pump functioning. The FWUC has no more capacity to pre-finance the pump operations.

Table 2: Summary of irrigated area and ISF level between 2004 and 2010

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Season** | **Total area cultivated** | **Area under** **gravity irr.** | **Area with** **add. pumping** | **Total ISF** |
| **Ha** | **Ha** | **ISF** | **Ha** | **ISF** | **riels** |
| 1 | Dry - Nov 2004 - Feb 2005 | *150.00\** | *150.00*  | **70,000**  |  |  | *10,500,000*  |
| 2 | Early wet - Apr - July 2005 | **111.33**  | **109.46**  | **80,000**  |   |   | 8,850,300  |
| 3 | Dry - Nov 2005 - Feb 2006 | **194.61**  | **127.70**  | **80,000**  | *66.91* | **50,000** | 13,561,500  |
| 4 | Dry - Nov 2006 - Feb 2007 | *130.00*  | *100.00*  | **120,000**  | *30.00* | **50,000** | *13,500,000*  |
| 5 | Dry - Nov 2007 - Feb 2008 | *130.00*  | *100.00*  | **150,000**  | *30.00* | **50,000** | *16,500,000*  |
| 6 | Dry - Nov 2008 - Feb 2009 | **103.56**  | **103.56**  | **50,000**  |  |  |  5,178,000  |
| 7 | Early wet - Apr - July 2009 | **86.00**  |  **86.00**  | **200,000**  |   |   | 17,200,000  |
| 8 | Dry - Nov 2009 - Feb 2010 | **128.91**  | **93.00**  | **180,000**  | **35.51**  | **80,000**  | 19,600,800  |
| 9 | Early wet - Apr - July 2010 | **60.00**  | **60.00**  | **50,000**  |   |   | 3,000,000  |
| 10 | Planned:Dry - Nov 2010 - Feb 2011 | 160.00  | 120.00  | 240,000  | 40.00  | 120,000  | 33,600,000  |

\* Numbers in italic are estimations from the FWUC, due to lack of written records at FWUC level.

We can see in this table as well that the irrigated area never reached 300 ha as it was planned initially, but was limited to around 130 ha maximum per season. The reasons are the following ones:

* The pumping capacity was lower than expected due also to the lower level of the water in the river during the growing season.
* Some farmers in the highest parts of the irrigated area wanted to continue to cultivate in the normal wet season without supplementary irrigation (and without higher costs).
* Some farmers in the higher half part of the primary canal are cultivating, but they have to pump water from the primary canal to the secondary canal. This is costly and many farmers cannot afford it.
* Some farmers could not afford the irrigation costs, especially during the early wet season, finally that season was abandoned during some years due also to lack of funds at FWUC level to pay for the fuel.
* The limited maintenance of the canals has also reduced the irrigation capacity of the system.
1. **The 2009-2010 dry season: budget difficulties**

During the season 8, nearly 130 ha were irrigated. That year the FWUC had to pump nearly continuously to feed the fields due to a lack of rains and it costs to the FWUC over 17 million riels for the diesel and oil. This was over the financial capacity of the FWUC, but to save the crops they continued irrigating the fields by borrowing diesel from the station. They had to pay high interests and reimbursed with ISF collection at the harvesting time. The fund balance at the beginning of the early wet season, around 7 million riels, was insufficient to cover the operation costs, so the FWUC organized the diesel provision directly by the farmers. This is a temporary solution which will probably not be functional during the next season with more farmers. It will surely exclude the poorest ones who have low investment capacity.

Table 3: FWUC fund balance from 2004 to 2010

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Season** | **Collected ISF** | **% collected** | **Other incomes** | **Expenditures** | **Balance** |
|  | **riels** | **riels** | **riels** | **riels** |
| 1 | Dry - Nov 2004 - Feb 2005 | *10,500,000*  | *100%* | *14,400,000\**  | *15,521,700*  | **9,378,300**  |
| 2 | Early wet - Apr - July 2005 | **8,375,400**  | 95% | **9,819,500**  | **17,503,600**  | **10,069,600**  |
| 3 | Dry - Nov 2005 - Feb 2006 | **13,072,100**  | 96% | **786,000**  | **10,829,200**  | **13,098,500**  |
| 4 | Dry - Nov 2006 - Feb 2007 | *12,500,000*  | *93%* |  | *14,000,000*  | *11,598,500*  |
| 5 | Dry - Nov 2007 - Feb 2008 | *15,500,000*  | *94%* |  | *14,000,000*  | *13,098,500*  |
| 6 | Dry - Nov 2008 - Feb 2009 |  ***5,178,000***  | *100%* |  | *5,000,000*  | *13,276,500*  |
| 7 | Early wet - Apr - July 2009 | *17,200,000*  | *100%* |   | *14,377,500*  | **16,099,000**  |
| 8 | Dry - Nov 2009 - Feb 2010 | **17,619,300**  | 90% |  | **25,926,700**  | **7,791,600**  |
| 9 | Early wet - Apr - July 2010 | *3,000,000\** | *100%* |  | *5,000,000* | *5,791,600*  |
| 10 | Planned:Dry - Nov 2010 - Feb 2011 |  *33,600,000*  | *100%* | *26,200,000*  | *24,590,000*  | *41,001,600*  |

\* Numbers in italic are estimations from the FWUC, due to lack of written records at FWUC level. The red numbers are planned results.

1. **FWUC budget analysis for 2009-2010**

Table 4: FWUC expenditures for the season 2009-2010\*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Code** |  | **Designation** | **Unit** | **Unit price** | **Quan-tity** | **Total** | **%age** |
| 1 | Allowances |  |  |  | 1,260,000 | 5.9% |
|  |  | FWUC president | Person - season | 140,000 | 1 | 140,000 |  |
|  |  | Village representative | Person - season | 120,000 | 3 | 360,000 |  |
|  |  | Group leaders | Person - season | 100,000 | 3 | 300,000 |  |
|  |  | ISF collector | Person - season | 80,000 | 4 | 320,000 |  |
|  |  | Commune chief | Person - season | 30,000 | 1 | 30,000 |  |
|  |  | Village chiefs | Person - season | 30,000 | 3 | 90,000 |  |
|  |  | Police | Person - season | 20,000 | 1 | 20,000 |  |
| 2 | Running costs / Travel and per diem |  |  | 634,500 | 3.0% |
|  |  | Transportation allowance | per travel | 3,900 | 45 | 175,500 |  |
|  |  | Running costs and meetings | Per month | 91,800 | 5 | 459,000 |  |
| 3 | Operation costs |  |  |  | 17,412,400 | 81.0% |
|  |  | Pump / gate operators | Per day | 5,000 | 41 | 205,000 |  |
|  |  | Diesel | Kan / 30 liter | 93,670 | 178 | 16,673,400 |  |
|  |  | Engine oil | Thong / 18 liter | 89,000 | 6 | 534,000 |  |
| 4 | Maintenance |  |  |  | 2,185,600 | 10.2% |
|  |  | Secondary canals | Canal | 130,900 | 4 | 523,600 |  |
|  |  | Other structures | Bridge | 238,000 | 1 | 238,000 |  |
|  |  | Pump | Per month | 356,100 | 4 | 1,424,400 |  |
| **Totals** |  |  |  |  | **21,492,500** | **100.0%** |
| **Irrigated area ha** |  |  |  | **128** |  |
| **Average ISF to cover budget riels / ha** |  |  |  | **167,910** |  |
| **Real average ISF riels / ha** |  |  |  | **152,050** |  |

\*Expenditures related to early wet season were excluded from the calculation made by farmers.

The expenditures related to allowance, travel, running costs and meeting organization are below 10% of the total budget. Over 80% is dedicated to pump operation and only 10% for maintenance.

This budget is nearly totally dedicated to operation costs and there is no provision for exceptional and long term expenses like election, over pumping or for the long term maintenance. Even for the yearly small maintenance, the budget is very limited and allows the FWUC to carry out only small works. More worrying, there is no fund for the future renewal of the pump or major repairs to the pump. It can be expected that after some more years of functioning the pumps will need either major repairs or renewal and the farmers would be fully dependent on external funding.

The ISF collected that season was largely insufficient to cover the FWUC costs. In consequence, the ISC discussed with the FWUC committee the possibility of another budget for the next season.

1. **FWUC new budget proposal for 2010-2011**

Table 5: Seasonal budget proposal for 2010-2011

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Code** |  | **Designation** | **Unit** | **Unit price** | **Quan-tity** | **Total** | **%age** |
| 1 | Allowances |   |   |   |  1,390,000 | 4.0% |
|  |  | FWUC president | Person - season | 140,000  | 1  | 140,000  |  |
|  |  | Village representative | Person - season | 120,000  | 3  | 360,000  |  |
|  |  | Group leaders | Person - season | 100,000  | 4  | 400,000  |  |
|  |  | ISF collector | Person - season |  80,000  | 4  | 320,000  |  |
|  |  | Commune chief | Person - season | 30,000  | 1  | 30,000  |  |
|  |  | Village chiefs | Person - season | 30,000  | 4  |  120,000  |  |
|  |  | Police | Person - season |  20,000  |  1  | 20,000  |  |
| 2 | Travel / running cost / services |   |   |   |  1,680,000 | 4.9% |
|  |  | Transportation allowance | Per travel | 4,000  | 45  | 180,000  |  |
|  |  | Running costs and meetings | Per month | 100,000  | 5  | 500,000  |  |
|  |  | Services | Per day | 100,000  | 10  | 1,000,000  |  |
| 3 | Operation costs |   |   |   |  13,510,000 | 39.3% |
|  |  | Pump & gate operators | Day | 5,000  | 40  | 200,000  |  |
|  |  | Diesel / transport | Kan / 30 liter | 92,000  | 140  | 12,880,000  |  |
|  |  | Engine oil | Thong / 18 liter | 86,000  | 5  | 430,000  |  |
| 4 | Yearly maintenance |   |   |   |  8,010,000 | 23.3% |
|  |  | Pump | Month | 250,000  | 4  | 1,000,000  |  |
|  |  | Main canal | Meter | 5,000  | 1,000  | 5,000,000  |  |
|  |  | Secondary canals | Canal | 100,000  | 15  | 1,500,000  |  |
|  |  | Gates | Gate | 10,000  | 15  | 150,000  |  |
|  |  | Other structures | Struct. | 30,000  |  12  | 360,000  |  |
| 5 | Major repairs and long term maintenance work |   |   |   | 0.0% |
| 6 | Special expenditures |   |   |   |   | 0.0% |
|  |  | Election |  |  |  |  |  |
|  |  | Equipment |  |  |  |  |  |
| 7 | Provisions |   |   |   |  9,830,000 | 28.6% |
|  |  | Reserve for suppl. Pumping | Kan / 30 liter |  92,000  | 40  |  3,680,000  |  |
|  |  | Election |  |  |  | 150,000  |  |
|  |  | Major repairs and long term maintenance |  |  | 2,000,000  |  |
|  |  | Pump renewal |  |  |  | 4,000,000  |  |
| **Totals** |  |  |  |  |  | **34,420,000**  | **100.0%** |
| **Irrigated area** |  |  |  | **160**  |  |
| **Average ISF riels / ha** |  |  |  | **215,125**  |  |

In this budget, we included service payment for the financial and technical support to the FWUC. The ISC will be contracted by the FWUC to follow up accounting and to provide advices for maintenance. It is planned that the ISC will mobilize funds from EU to carry out a major maintenance of all canals in order to improve irrigation and extend the irrigated area to at least 160 ha.

The yearly maintenance as been increased to 1930 USD and provisions for excess pumping (in case of particularly dry season), election, long term maintenance have been included.

Nearly 965 USD will be provisioned every season for the future pump renewal.

This total budget of KHR 34, 420,000 will be covered by collecting ISF over 160 ha of irrigated area.

* 120 ha with gravity flow will pay ISF 240,000 KHR / ha / season
* 40 ha with additional pumping will pay ISF 120,000 KHR / ha / season
1. **Fund support from MOWRAM**

This increase of irrigated area will be possible thanks to the maintenance of the system.

The farmers have agreed to increase the ISF from 200,000 to 240,000 KHR, which is a big effort for them.

However to function properly the FWUC needs to have enough fund in hand before the season (ISF is collected at harvest time) in order to pay for the pumping costs. So, the FWUC would like to request a fund of KHR 26,200,000 from MOWRAM to cover the following costs:

Table 6: Fund request to MOWRAM

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Code** |  | **Designation** | **Unit** | **Unit price** | **Quan-tity** | **Total** | **%age** |
| 2 | Travel / running cost / services |   |   |   |  1,000,000 |  |
|  |  | Services | Per day | 100,000  | 10  | 1,000,000  |  |
| 3 | Operation costs |   |   |   |  13,510,000 |  |
|  |  | Pump & gate operators | Day | 5,000  | 40  | 200,000  |  |
|  |  | Diesel / transport | Kan / 30 liter | 92,000  | 140  | 12,880,000  |  |
|  |  | Engine oil | Thong / 18 liter | 86,000  | 5  | 430,000  |  |
| 4 | Yearly maintenance |   |   |   |  8,010,000 |  |
|  |  | Pump | Month | 250,000  | 4  | 1,000,000  |  |
|  |  | Main canal | Meter | 5,000  | 1,000  | 5,000,000  |  |
|  |  | Secondary canals | Canal | 100,000  | 15  | 1,500,000  |  |
|  |  | Gates | Gate | 10,000  | 15  | 150,000  |  |
|  |  | Other structures | Struct. | 30,000  |  12  | 360,000  |  |
| 7 | Provisions |   |   |   |  3,680,000 |  |
|  |  | Reserve for suppl. Pumping | Kan / 30 liter |  92,000  | 40  |  3,680,000  |  |
| **Totals** |  | **Total fund request** |  |  |  | **26,200,000**  | **76.1%** |
|  |  | **Total budget** |  |  |  | **34,420,000** | **100.0%** |

This fund will allow the FWUC to ensure the pumping costs, the maintenance during the season and will provide a provision for supplementary pumping in case of exceptional dry season.

The fund will also fund the support from the ISC to ensure a professional financial management and a clear reporting to MOWRAM.

1. **Conclusion**

The strong points of Sdao Kong scheme are:

* The FWUC has an autonomous management and has been able to manage the scheme since 2005
* So the FWUC and the farmers are now experienced with managing the scheme and developing double cropping.
* The farmers are already paying a high ISF rate ~44 USD and ready to pay even more to guarantee a long term access to irrigation
* The soil fertility is good and yields are over 3 tons / ha
* The potential for the FWUC to be fully autonomous (including financially) in the future is high.

Therefore, the FWUC would like to ask MOWRAM to consider its request for the funding of its future irrigation campaign (November 2010 to February 2011) for an amount of **KHR 26,200,000 or 6,313 USD** (1 USD @ 4150 KHR) that would allow the FWUC to ensure its long term development.