

**OFFICE OF THE DIRECTOR OF HORTICULTURE & SECRETARY  
ODISHA HORTICULTURE DEVELOPMENT SOCIETY, BHUBANESWAR.**

No.2 MA (H<sub>1</sub>) 184/2012 1/71 /Hort., date 4.1.13

To

The Deputy Director of Horticulture (All)/  
The Asst. Director of Horticulture (All).

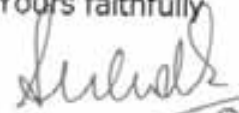
Sub.: Guidelines for excavation of Farm Ponds under National Horticulture Mission.

Sir,

Enclosed, please find herewith the detailed guidelines for excavation of Farm Ponds under National Horticulture Mission. You are requested to execute the programme following the guidelines. Payment of subsidy can be made out of the funds placed with you under National Horticulture Mission.

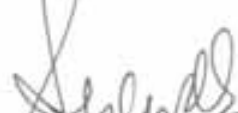
Enclosures: As above

Yours faithfully

  
Director of Horticulture &  
Secretary, OHDS

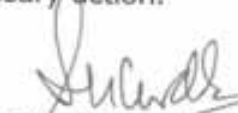
Memo No. 1/72 /Hort., Date 4.1.13

Copy forwarded to the Additional Director of Agriculture (Engg.), Directorate of Agriculture & Food Production, Odisha for information and necessary action.

  
Director of Horticulture &  
Secretary, OHDS

Memo No. 1/73 /Hort., Date 4.1.13

Copy submitted to the Principal Secretary to the Govt., Agriculture Department for favour of kind information and necessary action.

  
Director of Horticulture &  
Secretary, OHDS

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4/1/13

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# ABSTRACT OF ESTIMATE FOR FARM POND WITH POLYETHELENE LINING UNDER N.H.M

Sl No	Item of Work	Qty	Unit	Rate	Amount(s)
	Excavation of any approved type of soil in approved borrow area by mechanical means and unloading the soil within initial lead of 1 Km on properly prepared and scientifically approved surface including spreading and levelling the earth in 22.5 cm layers to make ready for watering and compaction	894.00	Cum	52.61	47030.99
1	In dams and dykes for all heights including construction, maintenance, watering and lighting of haul road and borrow area etc. complete as per the direction of engineer-in-charge				
	9 measurement of the fill to be taken on the finished compacted section under OMC condition.				
2	Ramming and rolling of earthwork with light HRR in layers not exceeding 0.3M depth	894.00	Cum	7.42	6631.58
3	Fine dressing at top of Bund	191.08	Sqm	168	321.01
	Fine dressing and turfing with initial lead of 50M and initial lift of 1.5m as per direction of engineer in charge	729.48	Sqm	4.94	3603.02
5	Spreading sand at bottom of pond	29.40	cum	202.36	5949.53
6	Cost of supply of 500 micron thick virgin polyethylene sheet	670.45	Sqm	90	60340.46
	Laying and fixing of polyethylene sheet in position with joining including trench cutting, cost of jointing, cost of adhesives/cost thermal stitching complete as per direction of Engineer in charge	670.45	Sqm	Ls	Ls
7					9660-00
8	Cost of masonry sluice	1	No	6288.20	6288.20
				Total	139824.79
	Contingencies				175.00
				G. total	140000

(Rupees one Lakh forty Thousand only)

Prepared by

Ram

18/12/2012

Assistant Agri. Engineer  
Directorate of Hort.  
Bhubaneswar-15, (Orissa)

Counter signed

*[Signature]*  
18.12.2012  
Asst. Director of Hort. (Engg.)  
Orissa, Bhubaneswar

Counter signed.

*[Signature]*  
Director of Horticulture  
Orissa, Bhubaneswar

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## SPECIFICATION OF FARM POND UNDER NHM

Top	20 Mx	20 M=	0.1 Ac	0.15
Cutting Slope	1			
Depth of Cut	3 MX			
Bottom size of pond	14 M x	14 M=		
Berm	0.5			
Top Width of Bund	1.7			
Bund Slope	1.5			
Bond Height	1.8			
Bond Inner to inner	21 x	21		
Bond Base outer to outer	35.2	35.2		
Bond bottom width	7.1			
Area of Pond including Bund	1239.04 Sam=	0.3098 Ac		
CS Area of Bund around	1.7 +	7.1 1/2 x	1.8	7.92 Sqm
Leneth of Bund=2X	28.1 +	28.1 1=	112.4	
Volume of Bund	112.4 X	7.92 =	890.21 Cum	
<b>1. Volume of Excavation</b>			20 M	

### DETAILED ESTIMATE FOR FARM POND WITH POLYETHYLENE LINING OF SIZE

- 1 Excavation , loading, unloading and carriage by Mechanical means of all types of soil, including stoney earth, gravel and moorum etc. interspread with boulders upto 1/2 cum size with all lifts and delifts ncluding trimming of slopes and bed to design section and depositing the excavated materials away from work site as per the specification and direction of Engineer in Charge within an initial lead of 1 Km

Size of pond at Top	20 M X	20 M=	400 Sqm	
Cutting Slope	1 H:	1 V		
Size of pond atBottom	14 MX	14 M=	196 Sqm	
Volume of Cut={	400 +	196 1/2X	3 =	894.00 Cum
Volume of Earthwork excavated= Volume of Bund		=	894.00 Cum	

- 2 Ramming and rolling of earthwork with light HRR in layers not exceeding 0.3M depth

3 Spreading sand in pond bottom	14 M x	14 M x	0.15	29.4 Cum
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- 4 Fine dressing and turfing with initial lead of 50M and initial lift of 1.5m as per direction of engineer in charge

Bund Slope length	2X	112.4 M	x	3.24 M	
5 Fine dressing at top of Bund		112.4 M	x	3.24 =	729.48 Sqm
				1.70 =	191.08 Sqm

- 6 Cost of Polyethelene linning

*Bmi*

Cutting slope Length				
Slopes =			4.24 M	
2 x {	20 +	14 }/2 X	4.24 =	144.25 Sqm
2 x {	20 +	14 }/2 X	4.24 =	144.25 Sqm
Bottom				
Berms	14 MX	14 M x	=	196.00 Sqm
2 x {	21 +	20 }/2M	0.50 =	20.50 Sqm
		x		
2 x {	21 +	20 }/2M	0.50 =	20.50 Sqm
Insertion into Bund		x		
2*{	21 + 2	21 }/2M	1.00 =	84.00 Sqm
	X	x		
Add for overlapping	10 %			609.50 Sqm
				60.95 Sqm
				670.45 sqm

## DETAILED ESTIMATE FOR SLUICE

earthwork Excavation for  
foundation of sluice Headwall

1 Upstream	1 X	0.95 x	0.90 =	0.86 Cum
Downstream	1 X	1.05 x	0.90 =	0.95 Cum
			Total	1.80 Cum@
2 Spreading Sand in foundation including ramming and watering	1 X	0.95 x	0.15 =	
	1	1.05	0.15	0.14 Cum
			Total	0.16 Cum
3 C.C 1:4:8 using 4 Cm size H.G.Metal				0.30 Cum
	1 X	0.95 x	0.15 =	0.14 Cum
	1 x	0.15 x	0.15 =	0.02 Cum
			Total	0.17 Cum
4 Laterite stone masonry in C.M. 1:6				
Upstream	1 X	0.9 x	0.60 =	0.54 Cum
Downstream	1 X	0.9 x	0.60 =	0.54 Cum
			Total	1.08 Cum
Upstream	1 X	0.7 x	0.80	
Downstre	1 X	0.8 x	=	0.56 Cum
			0.80 =	0.64 Cum
			Total	1.20 Cum

*Rome*

✓  
5 16 mm thick cement plastering

in CM 1:6

Upstream	1 X	0.8	=	0.80 Sqm
Top	1 x	0.5		0.50 Sqm
sides = 2 x (	0.7 +	0.5 ) x	0.80 =	1.92 Sqm
Downstream	1 X	0.8	=	0.80 Sqm
Top	1 x	0.5		0.50 Sqm
sides = 2 x (	0.8 +	0.5 ) x	0.80 =	2.08 Sqm
Total				6.60 Sqm

Laying and fixing of Hume pipe 6" dia with collars

Lenth	6 M	Or	3.00 Nos
Cost of Collars			2.00 Nos
Labor charges	6 M	L.S Rs	30.00 Per m

Prepared by

*P. S. S.*

18/12/2012

Assistant Agril. Engineer  
Directorate of Hort.  
Bhubaneswar-15, (Orissa)

Counter signed

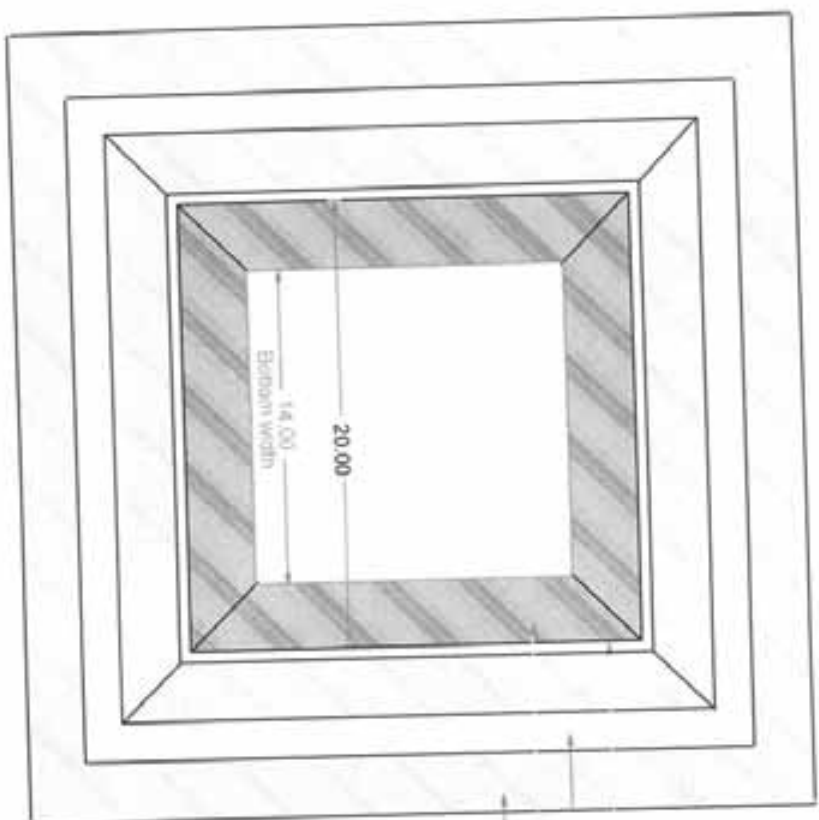
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29.12.2012  
Asst. Director of Hort. (Orissa)  
Bhubaneswar

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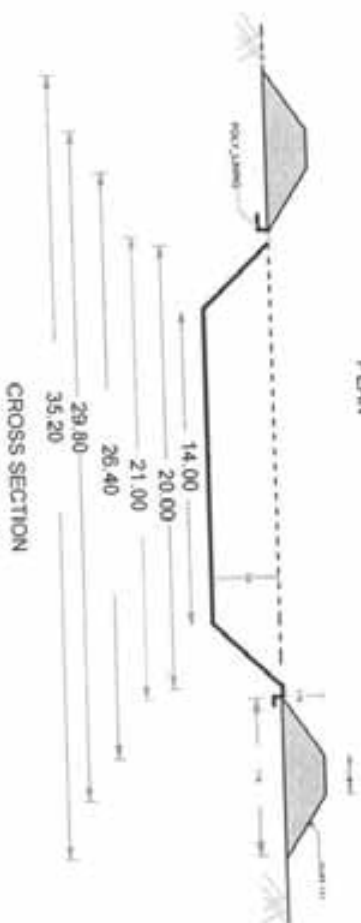
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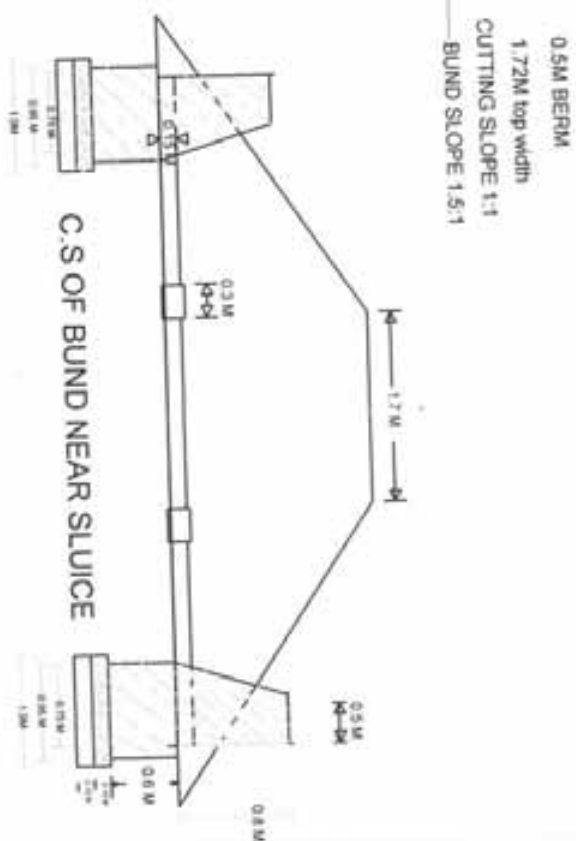
PLAN & SECTIONAL VIEW OF FARM POND WITH POLYETHELENE LININGUNDER NHM



PLAIN



CROSS SECTION



Prepared by

18/11/20  
Asstt Agri. Engineer  
Directorate of Hort.  
Bhubaneswar-75, (Orissa)

conductor


19.12.2012

Asst. Director of Field Training  
Criminal Justice Institute



## SPECIFICATION OF FARM POND UNDER NHM

Size of pond	20m x 20m X3m		
Top	20m x 20m	Depth of Cut	1.5m
Bottom size of pond	14m x 14m	Depth of Cut	1.5m
Top Berm	0.5 m		
Slope	1:01		
Top Width of Bund	1.8 m (1:1.5)		
Bund Height	1.8 m		10.53
Bund Slope	3.24m		
Bund Inner to inner	21m x 21m		3.55
Bund Base outer to outer	35.4mX35.4m		
Bund bottom width	7.2 m		
Area of Pond including Bund	35.4mX35.4m	1253 sqm	0.31 Ac
CS Area of Bund around Pond	$(1.8\text{ m} + 7.2\text{ m})/2 \times 1.8\text{ m}$	= 8.1	sqm
Length of Bund	4X28.2	= 112.8	rmt
Volume of Bund	112.8 X 8.1	= 913.68	cum
<b>Volume of Excavation</b>		= 1031.25	cum

  
 Assistant Agril. Engineer  
 Directorate of Hort.  
 Bhubaneswar-15, (Orissa)



# MODEL ESTIMATE FOR FARM POND (MANUAL WITHOUT POND LINING)

SIZE - 20m X 20mX3m

Sl. No.	Item of work	Dimension			Quantity	Unit	Rate (Rs)	Amount (Rs)
		L	B	H				
1	Survey, clearing shrubs, bushes, jungles and laying out including cost of pegs, ropes etc.	L.S.						1000
1	Excavation in all types of soil, including stoney earth, gravel and moorum etc. interspread with boulders upto 1/2 cum size with all lifts and delifts including bed levelling to design section and depositing the excavated materials for construction of embankment.							
	Step I	20	20	1	400	cum	86.89	34756
	Step II	18.5	18.5	0.5	171.125	cum	86.89	14869
	Step II with 1.5m extralift	18.5	18.5	0.5	171.125	cum	93.58	16014
	Bottom with 1.5m extra lift	17	17	1	289	cum	93.58	27045
	Total				1031.25	cum		92684
2	Ramming and rolling of earthwork with light HRR	Quantity as above			1031.25	cum	7.42	7652
3	Fine dressing and turfing with one extra lead of 50m over the initial lead of 50 m and extra lift of 1.5 m over initial lift of 1.5m 2x bund slope length x bund length = 2 x 3.24 m x 112.8				737.34	sqm	7.24	5338

## DETAILED ESTIMATE FOR SLUICE

1	Earthwork in excavation for foundation of sluice Headwall							
	Upstream	1	X	0.95	x	0.90	=	0.86 Cum
	Downstream	1	X	1.05	x	0.90	=	0.95 Cum
						Total		1.80 Cum
		@	Rs.	86.89		1.80 cum		156.40
2	Spreading Sand in foundation including ramming and watering	1	X	0.95	x	0.15	=	0.14 Cum
		1		1.05		0.15		0.16 Cum
						Total		0.30 Cum
		@	Rs.	206.92		0.30 cum		62.08
3	C.C 1:4:8 using 4 Cm size H.G.Metal							
		1	X	0.95	x	0.15	=	0.14 Cum
		1	x	0.15	x	0.15	=	0.02 Cum
						Total		0.17 Cum
		@	Rs.	2981.33		0.17 =		506.83

*Pm*



4 Laterite Stone masonry (1:6 in f&p.

Upstream	1	X	0.9	x	0.60	=	0.54	Cum
Downstream	1	X	0.9	x	0.60	=	0.54	Cum
						Total	1.08	Cum
Upstream	1	X	0.7	x	0.80	=	0.56	Cum
Downstream	1	X	0.8	x	0.80	=	0.64	Cum
							1.20	Cum
						Total	2.28	
							5729.53	
@ Rs.			2512.95		2.28	cum		

5 16 mm thick cement plastering in CM 1:6

Upstream	1	X	0.8			=	0.80	Sqm
Top	1	x	0.5			=	0.50	Sqm
sides	2	x	(0.7+0.5)	x	0.8	=	1.92	Sqm
Downstream	1	X	0.8			=	0.80	Sqm
Top	1	x	0.5			=	0.50	Sqm
sides	2	x	(0.8+0.5)	x	0.8	=	1.92	Sqm
						Total	6.60	Sqm
							728.50	
@ Rs.			110.38		6.60	sqm		

6 Laying and fixing of Hume pipe 6" dia with collars

Length	8	M		4.00	Nos	Nos	4000
Cost of Collars				3.00	Nos	Nos	450
Labor charges	6	M	L.S Rs	50.00	Per m	Per m	300

8 Expr.on misc. and other unforeseen items

Total 1393.00

G Total

Rs. 120000

(Rupees one lakh twenty thousand) only

Prepared by

R. S. S.

Assistant Agril. Engineer  
Directorate of Hort.  
Bhubaneswar-15, (Orissa)

Countersigned

*[Signature]*

Director of Horticulture  
Orissa, Bhubaneswar







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12 5  
10 10  
8 10  
6 10  
4 10  
2 10  
1 10  
10 10  
8 10  
6 10  
4 10  
2 10  
1 10

10 10

10 10

10 10

# SPECIFICATION OF FARM POND UNDER NHM

Size of pond	20m x 15m X3m		
Top	20m x 15m	Depth of Cut	1.5m
Bottom size of pond	16m x 11m	Depth of Cut	1.5m
Top Berm	0.5 m		
Top Width of Bund	1.6		
Bund Height	1.6m		
Bund Slope	2.88 (1:1.5)		
Bund Inner to inner	21m x 16m		
Bund Base outer to outer	33.8mX28.8m		
Bund bottom width	6.4		
Area of Pond including Bund	33.8mX28.8m	973.4 sqm	0.24 Ac
CS Area of Bund around Pond	$(1.6m + 6.4m)/2 \times 1.6 m$	= 6.4	sqm
Length of Bund	$2 \times (27.4 + 22.4)m$	= 99.6	rmt
Volume of Bund	$99.6 \times 6.4$	= 637.44	cum
Volume of Excavation		= 753.75	cum

  
 31/12/2013  
 Assistant Agril. Engineer  
 Directorate of Hort.  
 Bhubaneswar-15, (Orissa)



# MODEL ESTIMATE FOR FARM POND (MANUAL WITHOUT POND LINING)

SIZE - 20m X 15mX3m

Sl. No.	Item of work	Dimension			Quantity	Unit	Rate (Rs)	Amount (Rs)
		L	B	H				
1	Survey, clearing shrubs, bushes, jungles and laying out including cost of pegs, ropes etc.	L.S.						900
1	Excavation in all types of soil, including stoney earth, gravel and moorum etc. interspread with boulders upto 1/2 cum size with all lifts and delifts including bed levelling to design section and depositing the excavated materials for construction of embankment.							
	Step I	20	15	1	300	cum	86.89	26067
	Step II with 1.5m lift	18.5	14	0.5	124.875	cum	86.89	10850
	Step III with 1.5m extra lift	18.5	14	0.5	124.875	cum	93.58	11686
	Bottom with 1.5m extra lift	17	12	1	204	cum	93.58	19090
	Total				753.75	cum		67694
2	Ramming and rolling of earthwork with light HRR	Quantity as above			753.75	cum	7.42	5593
3	Fine dressing and turfing with one extra lead of 50m over the initial lead of 50 m and extra lift of 1.5 m over initial lift of 1.5m 2x bund slope length x bund length = 2 x 2.88 m x 99.6				573.70	sqm	7.24	4154

## DETAILED ESTIMATE FOR SLUICE

1	Earthwork in excavation for foundation of sluice Headwall							
	Upstream	1	X	0.95	x	0.90	=	0.86 Cum
	Downstream	1	X	1.05	x	0.90	=	0.95 Cum
						Total		1.80 Cum
		@	Rs.	86.89		1.80 cum		156.40
2	Spreading Sand in foundation including ramming and watering	1	X	0.95	x	0.15	=	0.14 Cum
		1		1.05		0.15		0.16 Cum
						Total		0.30 Cum
		@	Rs.	206.92		0.30 cum		62.08
3	C.C 1:4:8 using 4 Cm size H.G. Metal							
		1	X	0.95	x	0.15	=	0.14 Cum
		1	x	0.15	x	0.15	=	0.02 Cum
						Total		0.17 Cum
		@	Rs.	2981.33		0.17 =		506.83

*Pmr*



4	Laterite Stone masonry (1:6 in f&p.									
	Upstream	1	X	0.9	x	0.60	=	0.54	Cum	
	Downstream	1	X	0.9	x	0.60	=	0.54	Cum	
							Total	1.08	Cum	
	Upstram	1	X	0.7	x	0.80	=	0.56	Cum	
	Downstream	1	X	0.8	x	0.80	=	0.64	Cum	
								1.20	Cum	
							Total	2.28		
		@	Rs.	2512.95		2.28	cum		5729.53	
5	16 mm thick cement plastering in CM 1:6									
	Upstream	1	X	0.8			=	0.80	Sqm	
	Top	1	x	0.5			=	0.50	Sqm	
	sides	2	x	(0.7+0.5)	x	0.8	=	1.92	Sqm	
	Downstram	1	X	0.8			=	0.80	Sqm	
	Top	1	x	0.5			=	0.50	Sqm	
	sides	2	x	(0.8+0.5)	x	0.8	=	1.92	Sqm	
							Total	6.60	Sqm	
		@	Rs.	110.38		6.60	sqm		728.50	
6	Laying and fixing of Hume pipe 6" dia with collars									
	Length	6	M		4.00	Nos	Nos	3000		
	Cost of Collars				2.00	Nos	Nos	300		
	Labor charges	6	M	L.S Rs	50.00	Per m	Per m	300		
8	Expr.on misc. and other unforeseen items									
									877.00	
	Total									877.00
	G Total								Rs.	90000
	(Rupees Ninety thousand) only.									

Prepared by

R. S. S.

Assistant Agril. Engineer  
Directorate of Hort.  
Bhubaneswar-15, (Orissa)

Counter signed.

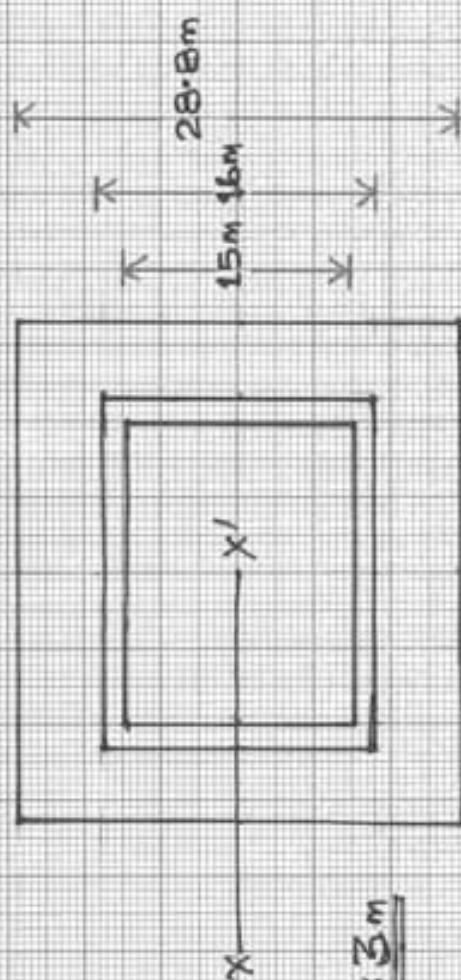
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Director of Horticulture  
Orissa, Bhubaneswar



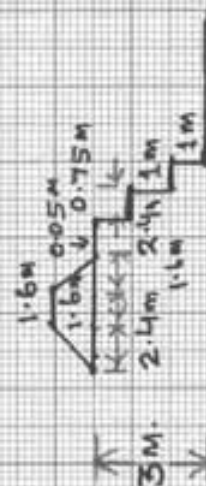


# FARM POND WITHOUT POND LINING



SIZE: 20m x 15m x 3m

20m  
21m  
35.8m



SCALE: 1:50

SECTION AT X-X'

Prepared by

03/01/2020  
Asst. Agril. Engineer  
Directorate of Hort.  
Muzhappilly, (Office)

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Fig. 1

Fig. 2

Fig. 3

## SPECIFICATION OF FARM POND UNDER NHM

Size of pond	15m x 15mX3m				
Top	15m x 15m	Depth of Cut	1.50		
Bottom size of pond	11mX11m	Depth of Cut	1.5m		
Top Berm	0.5 m				
Top Width of Bund	1.5 m				
Bund Slope	2.88 (1:1.5)				
Bund Height	1.6				
Bund Inner to inner	16m x 16m				
Bund Base outer to outer	28.6X28.6m				
Bund bottom width	6.3 m				
Area of Pond including Bund	28.6 X 28.6	818 sqm	0.20 Ac		
CS Area of Bund around Pond	(1.5m +6.3m)/2x1.5m	= 5.850	sqm		
Length of Bund	4X22.3m	= 89.2	rmt		
Volume of Bund	89.2 X 5.85	= 521.82	cum		
Volume of Excavation		= 551.25	cum		

  
 6/6/2013  
 Assistant Agril. Engineer  
 Directorate of Hort.  
 Bhubaneswar-75, (Orissa)



# MODEL ESTIMATE FOR FARM POND (MANUAL WITHOUT POND LINING)

SIZE - 15m X 15mX3m

Sl. No.	Item of work	Dimension			Quantity	Unit	Rate (Rs)	Amount (Rs)
		L	B	H				
1	Survey, clearing shrubs, bushes, jungles and laying out including cost of pegs, ropes etc.	L.S.						300
1	Excavation in all types of soil, including stoney earth, gravel and moorum etc. interspread with boulders upto 1/2 cum size with all lifts and delifts including bed levelling to design section and depositing the excavated materials for construction of embankment.							
	Step I	15	15	1	225	cum	86.89	19550
	Step II with 1.5m lift	13.5	13.5	0.5	91.125	cum	86.89	7918
	do (innermost)	13.5	13.5	0.5	91.125	cum	93.58	8527
	bottom (innermost)	12	12	1	144	cum	93.58	13476
	Total				551.25	cum		49471
2	Ramming and rolling of earthwork with light HRR	Quantity as above			551.25	cum	7.42	4090
3	Fine dressing and turving with one extra lead of 50m over the initial lead of 50 m and extra lift of 1.5 m over initial lift of 1.5m 2x bund slope length x bund length = 2 x 2.88 m x 69.2				398.59	sqm	6.54	2607

## DETAILED ESTIMATE FOR SLUICE

1	Earthwork in excavation for foundation of sluice							
	Headwall							
	Upstream	1	X	0.95	x	0.90	=	0.86 Cum
	Downstream	1	X	1.05	x	0.90	=	0.95 Cum
						Total		1.80 Cum
	@	Rs.		86.89		1.80 cum		156.40
2	Spreading Sand in foundation including ramming and watering	1	X	0.95	x	0.15	=	0.14 Cum
		1		1.05		0.15		0.16 Cum
						Total		0.30 Cum
	@	Rs.		206.92		0.30 cum		62.08
3	C.C 1:4:8 using 4 Cm size H.G.Metal							
		1	X	0.95	x	0.15	=	0.14 Cum
		1	x	0.15	x	0.15	=	0.02 Cum
						Total		0.17 Cum
	@	Rs.		2981.33		0.17 =		506.83

*Page*

516.75

450

4 Laterite Stone masonry (1:6 in f&p.

4	Upstream	1	X	0.9	x	0.60	=	0.54	Cum
	Downstream	1	X	0.9	x	0.60	=	0.54	Cum
							Total	1.08	Cum
	Upstream	1	X	0.7	x	0.80	=	0.56	Cum
	Downstream	1	X	0.8	x	0.80	=	0.64	Cum
								1.20	Cum
							Total	2.28	
	@	Rs.	2512.95		2.28	cum		5729.53	
	5	16 mm thick cement plastering in CM 1:6							
	Upstream	1	X	0.8			=	0.80	Sqm
5	Top	1	x	0.5			=	0.50	Sqm
	sides	2	x	(0.7+0.5)	x	0.8	=	1.92	Sqm
	Downstream	1	X	0.8			=	0.80	Sqm
	Top	1	x	0.5			=	0.50	Sqm
	sides	2	x	(0.8+0.5)	x	0.8	=	1.92	Sqm
							Total	6.60	Sqm
	@	Rs.	110.38		6.60	sqm		728.50	
	6	Laying and fixing of Hume pipe 6" dia with collars							
	Length	6	M		3.00	Nos	Nos	3000	
	Cost of Collars				2.00	Nos	Nos	300	
	Labor charges	6	M	L.S Rs	50.00	Per m	Per m	300	
8	Expr.on misc. and other unforeseen items								
	Total							250.00	
	G Total							Rs. 67502	
	Limited to Rs.67500.00 (rupees sixty seven thousand and five hundred only.								

Prepared by

*[Signature]*

Assistant Engineer  
Directorate of Hort.  
Bhubaneswar-15, (Orissa)

Countersigned.

*[Signature]*

Director of Horticulture  
Orissa, Bhubaneswar





# FARM POND WITHOUT POND LINING

SIZE = 15m x 15m x 3m



Prepared by

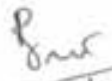
*[Signature]*  
Assistant Engineer  
Directorate of Hort.  
Bhubaneswar-75, (Orissa)

SCALE-1:2



## SPECIFICATION OF FARM POND UNDER NHM

Size of pond	15m x 10m X 3m			
Top	15m x 10m	Depth of Cut	1.5m	
Bottom size of pond	12m x 7m	Depth of Cut	1.5m	
Top Berm	0.5 m			
Top Width of Bund	1.2m			
Bund Height	1.4m			
Bund Slope	1.98 (1:1)			
Bund Inner to inner	16m x 11m			
Bund Base outer to outer	24mX19m			
Bund bottom width	4 m			
Area of Pond including Bund	24mX19m	456 sqm	0.11 Ac	
CS Area of Bund around Pond	$(1.2\text{ m} + 4\text{ m})/2 \times 1.4\text{ m}$	=	3.64 sqm	
Length of Bund	$2 \times (20+15)\text{m}$	=	70 rmt	
Volume of Bund	70 X 3.64	=	254.80 cum	
<b>Volume of Excavation</b>		=	<b>265.5 cum</b>	

  
 Assistant Agri. Engineer  
 Directorate of Hort.  
 Bhubaneswar-15, (Orissa)



# MODEL ESTIMATE FOR FARM POND (MANUAL WITHOUT POND LINING)

SIZE - 15m X 10mX3m

Sl. No.	Item of work	Dimension			Quantity	Unit	Rate (Rs)	Amount (Rs)
		L	B	H				
1	Survey, clearing shrubs, bushes, jungles and laying out including cost of pegs, ropes etc.	L.S.						100
2	Excavation in all types of soil, including stoney earth, gravel and moorum etc. interspread with boulders upto 1/2 cum size with all lifts and delifts including bed levelling to design section and depositing the excavated materials for construction of embankment.							
	Step I	15	10	1	150	cum	86.89	13034
	Step II with 1.5m lift	13.5	8.5	0.5	57.375	cum	86.89	4985
	Step III (1.5m extra lift)	13.5	8.5	0.5	57.375	cum	93.58	5369
	Bottom (1.5m extra lift)	12	7	1	84	cum	93.58	7861
	Total				348.75	cum		31249
3	Ramming and rolling of earthwork with light	Quantity as above			348.75	cum	7.42	2588
4	Fine dressing and turfing with one extra lead of 50m over the initial lead of 50 m of 1.5m 2x bund slope length x bund length = 2 x 1.98 m x 70				277.20	sqm	6.54	1813

## DETAILED ESTIMATE FOR SLUICE

1	Earthwork in excavation for foundation of sluice Headwall								
	Upstream	1	X	0.95	x	0.90	=	0.86	Cum
	Downstream	1	X	1.05	x	0.90	=	0.95	Cum
						Total		1.80	Cum
		@	Rs.	86.89		1.80	cum	156.40	
2	Spreading Sand in foundation including ramming and watering	1	X	0.95	x	0.15	=	0.14	Cum
		1		1.05		0.15		0.16	Cum
						Total		0.30	Cum
		@	Rs.	206.92		0.30	cum	62.08	
3	C.C 1:4:8 using 4 Cm size H.G.Metal	1	X	0.95	x	0.15	=	0.14	Cum
		1	x	0.15	x	0.15	=	0.02	Cum
						Total		0.17	Cum
		@	Rs.	2981.33		0.17	=	506.83	

*Page*



4	Laterite Stone masonry (1:6 in f&p.									
	Upstream	1	X	0.9	x	0.60	=	0.54	Cum	
	Downstream	1	X	0.9	x	0.60	=	0.54	Cum	
							Total	1.08	Cum	
	Upstram	1	X	0.7	x	0.80	=	0.56	Cum	
	Downstream	1	X	0.8	x	0.80	=	0.64	Cum	
								1.20	Cum	
							Total	2.28		
		@	Rs.	2512.95		2.28	cum		5729.53	
5	16 mm thick cement plastering in CM 1:6									
	Upstream	1	X	0.8			=	0.80	Sqm	
	Top	1	x	0.5			=	0.50	Sqm	
	sides	2	x	(0.7+0.5)	x	0.8	=	1.92	Sqm	
	Downstram	1	X	0.8			=	0.80	Sqm	
	Top	1	x	0.5			=	0.50	Sqm	
	sides	2	x	(0.8+0.5)	x	0.8	=	1.92	Sqm	
							Total	6.60	Sqm	
		@	Rs.	110.38		6.60	sqm		728.50	
6	Laying and fixing of Hume pipe 6" dia with collars									
	Length	4	M		2.00	Nos	Nos	2000		
	Cost of Collars				1.00	Nos	Nos	150		
	Labor charges	4	M	L.S Rs	50.00	Per m	Per m	200		
7	Expr.on misc. and other unforeseen items									
								0.00		
	Total									0.00
	G Total								Rs.	45283
	Limited to Rs.45000.00 (Rupees forty five thousand) only.									

*Proposed by*  
*Rout*  
 Assistant Engineer  
 April 1, 2013  
 Directorate of Horticulture  
 Bhubaneswar-75, (Orissa)

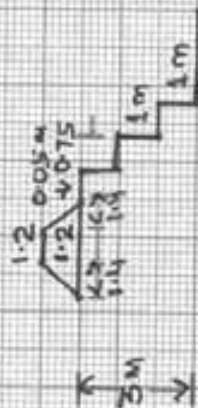
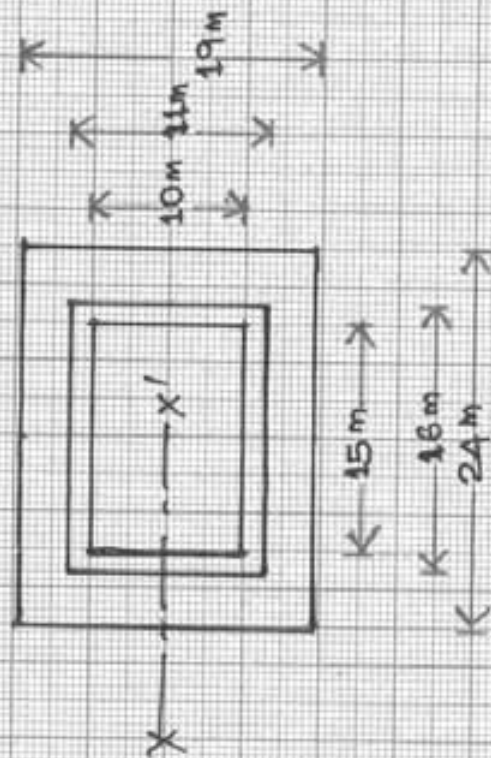
Countersigned,  
*S. S. S. S.*  
 Director of Horticulture  
 Orissa, Bhubaneswar





# FARM POND WITHOUT POND LINING

SIZE.  $15\text{m} \times 10\text{m} \times 3\text{m}$



SECTION = X-X'

SCALE: 1:50

Prepared by  
Sms  
Asst. Prof. Dr. J. R. R. R.  
Dr. J. R. R. R.  
Dr. J. R. R. R.  
Dr. J. R. R. R.



# ANALYSIS OF RATES FOR FARM POND UNDER NHM

- 1 Earthwork in hard soil for foundation within 50 m initial lead and 1.5 m initial lift including rough dressing and levelling of bed as per the direction of Engineer in charge.

Rate for 100 cum

Man Mulia	21.5	Nos @ Rs	150.00	Each	Rs	3225.00
Woman mulia	21.5	Nos @ Rs	150.00	Each	Rs	3225.00
Add 2% T&P					Rs	129.00
				Total	Rs	6579.00
Add 10% O.H					Rs	645.00
Add 20% for foundation					Rs	1444.80
					Rs	8668.80
					Rs	<b>86.69</b>

**For 1 cum**

- b Extra lift of 1. 50m or part there of over the initial lift of 1.50m, per 100 cum upto 3 m (up to 7.5m)

Man mulia	4.1	No@ Rs	150.00	each	Rs	615
Over head charges, 10%						61.5
2% Sundries ,T7P etc.						12.3
per 100 cum						688.8
For 1 cum, including lift						93.58

- c Extra lift of 1. 50m or part there of over the initial lift of 1.50m, per 100 cum upto 4.5m (up to 7.5m)

Man mulia	4.1	No@ Rs	150.00	each	Rs	615
Over head charges, 10%						61.5
2% Sundries ,T7P etc.						12.3
per 100 cum						688.8
For 1 cum, including lift						100.46

- 2 Sand spreading in foundation including watering and ramming per cum

Woman Mulia	0.1236	Nos @ Rs	150.00	Each	Rs	18.54
Sand	1	Cum @ Rs	38.00	per cum	Rs	38.00
Add 2% for T&P						1.13
						57.67
Add 10% O.H						5.65
Royalty of sand	1	Cum @ Rs	19.60	per cum	Rs	19.60
Transportation of sand	1	Cum @ Rs	124.00	per cum	Rs	124.00
						<b>206.92</b>

- 3 C.C 1:4:8 using 40 mm size crusher broken HG Metal

Metal	0.96	Cum @ Rs	744.00	per cum	Rs	714.24
Sand	0.48	Cum @ Rs	166.00	per cum	Rs	79.68
Cement	1.72	Qtl @ Rs	713.40	713.40	Rs	1227.05
Mason 2nd class	0.18	No @ Rs	190.00	per each	Rs	34.20
Man Mulia	2.5	No @ Rs	150.00	per each	Rs	375.00
Woman Mulia	1.4	No @ Rs	150.00	per each	Rs	210.00
						2640.17
Add 10% O.H						264.02
<u>Royalty</u>						
Metal	0.96	Cum @ Rs	70.56			67.74
Sand	0.48	Cum @ Rs	19.60			9.41
						<b>2981.33</b>

- 4 Laterite Stone masonry in CM 1:6

*Signature*



Rough dressed laterite Stone	1	Cum @ Rs	677.00	Cum	Rs	677.00
Sand	0.24	Cum @ Rs	166.00	Cum	Rs	39.84
Cement	0.572	Qtl @ Rs	713.40	Qtl	Rs	408.06
Stone dresser(spl)	2.12	No @ Rs	205.00	Each	Rs	434.60
Sangi mulia	1.41	No @ Rs	170.00	Each	Rs	239.70
Mason Spl	0.175	No @ Rs	205.00	Each	Rs	35.88
Mason 2nd class	1.05	No @ Rs	190.00	Each	Rs	199.50
Man Mulia	1.05	No @ Rs	150.00	Each	Rs	157.50
Man Mulia for preparing mortar	0.16	No @ Rs	150.00	Each	Rs	24.00

Add 10% O.H

2216.08

Royalty

221.61

Rough dressed laterite Stone	1	Cum @ Rs	70.56			70.56
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Sand	0.24	Cum @ Rs	19.60			4.70
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Rate for 1 Cum

2512.95

5 16mm thick plastering in cement mortar 1:6 over brick or stone masonry work in ground floor

Sand	0.018	Cum @ Rs	166.00	per cum	Rs	2.99
Cement	0.043	Qtl @ Rs	713.40	713.40	Rs	30.68
Mason 2nd class	0.16	No @ Rs	190.00	Each	Rs	30.40
Man Mulia	0.11	No @ Rs	150.00	Each	Rs	16.50
Woman mulia	0.11	No @ Rs	150.00	Each	Rs	16.50
Mulia for mixing	0.02	No @ Rs	150.00	Each	Rs	3.00

Add 10% O.H

100.06

10.01

110.07

6 Excavation of any approved type of soil in approved borrow area by mechanical means and unloading the soil within initial lead of 1 Km on properly prepared and scientifically approved surface including spreading and levelling the earth in 22.5 cm layers to make ready for watering and compaction in dams and dykes for all heights including construction, maintenance, watering and lighting of haul road and borrow area etc. complete as per the direction of engineer-in-charge measurement of the fill to be taken on the finished compacted section under OMC condition.

For 1 cum

#### A) Excavation by Mechanical Means

Considering Excavator of the following specification

Capacity of bucket	1	Cum			
Bucket fill factor	0.9				
Overall efficiency	83	%			
Considering effective working	50	min/Hr			
Production per hour (loose earth)	60	$\times 0.90 \times 0.83$	=	44.82	Cum/Hr
Hire charges of excavator excluding supervision charge per Hr	840				
Cost of Mechanical Excavation per 1 cum	18.74	/Cum			

#### B. Transportation cost

Capacity of Tipper (loose Soil)	5.5	Cum			
Taking the carrying capacity of tipper to be	80	%	=	4.4	Cum

*P. S.*









Man mulia	0.95	No@ Rs	150.00	each	Rs	142.5
Over head charges, 10%						14.25
2% Sundries ,T7P etc.						2.85
Total per 100 sqm						159.6
With extra lead, Rate/sqm						6.54
Extra lift of 1. 50m or part there of over the initial lift of 1.50m, per 100 sqm						
c Man mulia	0.42	No@ Rs	150.00	each	Rs	63
Over head charges, 10%						6.3
2% Sundries ,T7P etc.						1.26
per 100 sqm						70.56
Total, per 100 sqm						724.08
Per 1 sqm						7.24

11 Labour for spreading moorum and consolidation with HRR including watering but excluding cost and Data for 2.83 cum

Man Mulia for removing from	1.5	No @Rs	150.00	Each	Rs	225.00
Women Mulia for watering & conveyance etc.	1.5	No @Rs	150.00	Each	Rs	225.00

Add 10% O.H	450.00
Add 2% sundries	45.00
	9.00

Rate per 1 cum  
Cost of Moorum including royalty/cum

504.00  
178.09  
293.10  
**471.19**

Prepared by

P. S. S.

02/01/2012  
Assistant Agril. Engineer  
Directorate of Hort.  
Bhubaneswar-15, (Orissa)



# LEAD STATEMENT AND CALCULATION OF RATES OF MATERIALS

Material	Unit	Place	Lead (Km)	1st 5 km	upto 50km	TP upto 50Kms	Distance Beyond 50Km	TP beyond 50kms	Total TP	Cost	Total cost	Royalty	Total cost including royalty
40 mm CBHG Metal	Cum		5	124	0	0	0	0	124	620	744	70.56	814.56
Sand for filling	Cum		5	124	0	0	0	0	124	38	162	19.60	181.60
Sand (S/W)	Cum		5	124	0	0	0	0	124	42	166	19.60	185.60
Cement	Qtl		5	13.4	0	0	0	0	13.4	700	713.40	0	713.40
Moorum	Cum		20	124	109.5	0	0	0	234	40	274	19.60	293.10
Laterite Stone	Cum		15	124	73	0	0	0	197	480	677	70.56	747.56
RRHG Stone	Cum		5.00	124.00	0	0	0	0.00	124.00	100	224.00	70.56	294.56
Brick	2000 Noo		5.00	799	0	0	0	0.00	799.00	0.00	0.00	19.60	818.60

Prepared by


*Ravi*

22/01/2023  
Assistant Agt. Engineer  
Directorate of Hort.  
Bhubaneswar-15, (Orissa)



## GUIDE LINES FOR IMPLEMENTATION OF FARM POND AND POND LINING SCHEME UNDER NATIONAL HORTICULTURE MISSION.

1. Indicative estimates for different sizes of Farm Ponds are enclosed, the sizes being :
  - a. 20MX20MX3M with manual labour, without pond lining.
  - b. 20MX20MX3M with mechanical excavation and with pond lining
  - c. 20MX15MX3M with manual labour without pond lining.,
  - d. 15MX15X3M with manual labour without pond lining
  - e. 15MX10MX3M with manual labour without pond liningPreference should be given to any one of such models or models of higher dimensions. For farm ponds other than the abovementioned sizes, subsidy can be administered on pro-rata basis. However, the minimum size of the pond should not be less than 10MX10MX3M size.
2. Subsidy will be limited to 50% of the project cost.
3. Maximum cost of the project will be limited to Rs.100.00 per cum /cost of the unit.
4. The beneficiary will have to bear the extra cost if any other material or item of work is taken up.
5. Any farmer taking up horticultural activities is eligible to avail the benefits under the scheme.
6. The farmer will apply for execution of the project in the enclosed format to the DDH/ADH through concerned field functionaries.
7. The AHO is to issue the feasibility report.
8. The Farm Pond is to be executed in the same Mouza, Khata and Plot for which feasibility report has been issued by the AHO. No payment will be made if there is any deviation in location.
9. **It is mandatory that photographs with GPS enabled camera must be taken before and after execution of the programme in presence of the beneficiary and the AHO of the concerned block and must be retained in form of hard and soft copy.**
10. The beneficiary list is to be approved by the District Mission Committee.
11. On receipt of completed applications, the DDH/ADH should pre-sanction the subsidy and issue go-ahead letter in favour of the farmer/or the executants selected by the farmer.
12. The beneficiary is to execute the work as per the specified design. Pond lining is optional.
13. The Polythene used for the lining must be of 500 micron thick, virgin plastic.
14. Adjoining polyethylene sheets must be joined with adhesive or heat pressed to make the pond water tight.
15. The beneficiary is free to choose the supplier of the Polythene Sheet.
16. The ADH/DDH will facilitate the procurement of the polythene sheet on behalf of the farmer. In such cases, payment of subsidy for the polythene sheet can be made to the supplier on authorization of the farmer.
17. The work must be completed within a period of 90 days from the date of issue of go ahead letter / work order.
18. Deductions as per Govt. Rule will be made from bills while making payments.
19. The beneficiary has to submit stamped Advance Money Receipt towards subsidy due to him.
20. There is no provision to transport the excavated earth outside the project area in the approved estimate. If the beneficiary desires to take away the excavated earth and dump elsewhere, then he/she should do so at his/her own cost and means.
21. The specifications as mentioned in the drawing must be adhered to. The AAE will certify the specifications and submit his completion report to the DDH.
22. On the basis of the completion report and authorization of the farmer, the DDH/ADH will release the payment to the concerned farmer/executants/supplier.
23. The farmer/beneficiary will be responsible for maintenance of the pond.
24. The DDH/ADH will maintain the records and regularly submit progress report to the Directorate.

  
Director of Horticulture  
Odisha  
3/01/13  
**Director of Horticulture**  
Orissa, Bhubaneswar



APPLICATION FORM TO AVAIL SUBSIDY FOR FARM POND UNDER NHM.

01. Name of the Beneficiary (Capital letter):
02. Father's /Husband's Name:
03. Address : At PO  
G.P. Block  
P.S. District  
Tel. No. Mob. No.
04. Proof of Identity:  
Voter I-Card/PAN Card/D.L. No.  
( Attested copy to be submitted along with the application)
05. Category: SC/ST/W/Gen:
06. Details of Plot where FARM POND is to be excavated:  
Plot No. Khata No.  
Mouza G.P.  
Block District
07. Choice of Executant: i) For excavation:  
ii) For Polythene Lining:

### Declaration

I hereby declare that, I have gone through the detailed procedure laid down by the Director of Horticulture, Odisha, Bhubaneswar for excavation of Farm Pond under NHM and I shall abide by the rules & regulations. Further, I declare that the information furnished above is true to the best of my knowledge.

Date :

Signature of Beneficiary

Place :

### Recommendation

The documents furnished as above have been verified. The site is fit for excavation of Farm Pond under NHM. The GPS photograph is taken before execution for record.

Counter signature of ADH

Signature of AHO





**ADVANCE MONEY RECEIPT****ANNEXURE-B**

Received from Dy Director of Horticulture/Asst. Director of Horticulture  
 \_\_\_\_\_ a sum of Rs.....  
 (Rupees.....) towards the subsidy for execution  
 of earth work and polyethylene lining of Farm Pond in my field availed under National  
 Horticulture Mission during the year \_\_\_\_\_.

Date

Place  
 Identified by: AHO

Signature of the beneficiary

Address

**FOR OFFICE USE**

Certified that the subsidy amount mentioned above has been due as per the break up mentioned below.

- A. Towards earth work in excavation of Farm Pond by Mech means : Rs.  
 B. Towards polyethylene lining on Farm Pond Rs.  
 Total : Rs.

Signature of  
 A.H.O.

Signature of  
 Asst. Agril. Engineer

DDH/ADH



**ANNEXURE-C****COMPLETION CERTIFICATE**

Photograph of the Pond with beneficiary and a field functionary of Directorate.

01. Name of the Beneficiary (Capital letter) :
02. Father's /Husband's Name :
03. Address                      At                      P.O :  
                                          G.P.                      Block  
                                          P.S                      District  
                                          Tel No.                      Mob. No.
04. Name of the Executant: i) For excavation:  
                                          ii) For Polythene Lining:
08. Size of the farm pond.
06. Date of receipt of completion report  
       from the Beneficiary

**Signature of Beneficiary**



## ANNEXURE - D

### Beneficiary's Authorization

Excavation of farm pond in my Plot No.....Khata No.

Mouza.....has been successfully completed by the executants and pond lining has also been completed by M/s ...../ under NHM( Scheme on dated.....) I hereby authorize M/s..... & M/s.....to receive the subsidy for an amount of Rs..... from the Deputy Director of Horticulture/ADH....., that has been sanctioned in my favour by the Deputy Director of Horticulture/Asst. Director of Horticulture ..... vide letter/order no.....dated .....

Place :

Signature of Beneficiary

Date :

Rs.2/-  
Revenue  
Stamp

## ANNEXURE-E

### Beneficiary's undertaking

I, Sri.....S/o/D/o/W/o .....At .....G.P.....P.O....., Block..... District.....do hereby undertake that I will maintain properly the farm pond excavated in my field (Plot No....., Khata No.....Mouza .....) under assistance from Deputy Director of Horticulture/ADH..... under NHM. I further undertake that I will not cause any damage to the structure deliberately or dispose of the land on which the structure has been erected within next three years. If so entire cost of subsidy will be recovered from me.

Place :

Date :

Signature of Beneficiary

11

**Verification by the AHO/ADH**

The farm pond has been excavated in the field of the above mentioned beneficiary by M/s \_\_\_\_\_ and is found to be suitable for use by the beneficiary. Recommended for release of subsidy. The GPS photograph is taken after execution for record.

**ADH**

**AHO**

**Verification by the AAE**

The excavation of farm pond has been completed by M/s \_\_\_\_\_ as per the specification laid down by the Director of Horticulture, Odisha vide Directorate Letter No. \_\_\_\_\_ dt. \_\_\_\_\_. Subsidy for an amount of Rs. \_\_\_\_\_/- may be released in favour of the beneficiary.

Asst. Agril. Engineer

O/o the Dy. Director of Horticulture/ADH

Subsidy for Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_) only is released in favour of Sri. \_\_\_\_\_ towards excavation of farm pond under NHM on dt. \_\_\_\_\_.

Dy. Director of Horticulture/ADH