

**Lampiran 1. Inflow Debit Air Waduk Sengguruh (2009-2010)**

No	Bulan	Hari	Tgl	Inflow	
1	<b>Desember 2008</b>	Senin	29	86.46	
2		Selasa	30	63.05	
3		Rabu	31	61.46	
4		Kamis	1	91.81	
5		Jumat	2	93.32	
6		Sabtu	3	56.68	
7		Minggu	4	82.96	
8	<b>Januari 2009</b>	Senin	5	72.39	
9		Selasa	6	52.83	
10		Rabu	7	54.59	
11		Kamis	8	44.63	
12		Jumat	9	42.12	
13		Sabtu	10	41.96	
14		Minggu	11	70.36	
15		Senin	12	83.51	
16		Selasa	13	55.23	
17		Rabu	14	50.70	
18		Kamis	15	45.62	
19		Jumat	16	78.88	
20		Sabtu	17	56.74	
21		Minggu	18	53.84	
22		Senin	19	48.59	
23		Selasa	20	49.73	
24		Rabu	21	47.11	
25		Kamis	22	38.67	
26		Jumat	23	45.33	
27		Sabtu	24	49.19	
28		Minggu	25	55.67	
29		Senin	26	102.95	
30		Selasa	27	138.64	
31		Rabu	28	101.92	
32		Kamis	29	66.68	
33		Jumat	30	73.86	
34		Sabtu	31	100.24	
35			minggu	1	113.11
36			Senin	2	81.30
37			Selasa	3	62.31

38	<b>Februari 2009</b>	Rabu	4	57.64	
39		Kamis	5	57.66	
40		Jumat	6	57.06	
41		Sabtu	7	52.11	
42		minggu	8	67.67	
43		Senin	9	49.11	
44		Selasa	10	46.48	
45		Rabu	11	54.75	
46		Kamis	12	58.96	
47		Jumat	13	65.20	
48		Sabtu	14	53.65	
49		minggu	15	50.59	
50		Senin	16	48.54	
51		Selasa	17	52.22	
52		Rabu	18	48.74	
53		Kamis	19	54.67	
54		Jumat	20	72.96	
55		Sabtu	21	43.62	
56		minggu	22	46.11	
57		Senin	23	72.36	
58		Selasa	24	67.04	
59		Rabu	25	90.62	
60		Kamis	26	78.98	
61		Jumat	27	80.27	
62		Sabtu	28	101.12	
63		<b>Maret 2009</b>	minggu	1	105.45
64			Senin	2	83.96
65			Selasa	3	101.51
66	Rabu		4	108.84	
67	Kamis		5	102.23	
68	Jumat		6	86.34	
69	Sabtu		7	86.40	
70	minggu		8	85.63	
71	Senin		9	88.41	
72	Selasa		10	97.71	
73	Rabu		11	115.25	
74	Kamis		12	78.20	
75	Jumat		13	74.73	
76	Sabtu		14	79.71	
77	minggu		15	107.26	

78		Senin	16	111.83
79		Selasa	17	119.72
80		Rabu	18	148.29
81		Kamis	19	227.19
82		Jumat	20	126.85
83		Sabtu	21	83.87
84		minggu	22	144.16
85		Senin	23	91.30
86		Selasa	24	105.08
87		Rabu	25	107.84
88		Kamis	26	89.87
89		Jumat	27	116.67
90		Sabtu	28	192.60
91		minggu	29	104.24
92		Senin	30	95.73
93		Selasa	31	79.87
94	<b>April 2009</b>	Rabu	1	75.57
95		Kamis	2	86.07
96		Jumat	3	96.62
97		Sabtu	4	96.46
98		minggu	5	113.03
99		Senin	6	93.73
100		Selasa	7	96.11
101		Rabu	8	92.38
102		Kamis	9	161.63
103		Jumat	10	94.11
104		Sabtu	11	83.87
105		minggu	12	80.16
106		Senin	13	87.68
107		Selasa	14	75.98
108		Rabu	15	75.22
109		Kamis	16	88.54
110		Jumat	17	73.63
111		Sabtu	18	70.95
112		minggu	19	77.93
113		Senin	20	75.74
114		Selasa	21	67.54
115		Rabu	22	74.41
116		kamis	23	67.63
117		Jumat	24	62.64

118		Sabtu	25	60.73
119		minggu	26	57.95
120		Senin	27	57.19
121		Selasa	28	67.22
122		Rabu	29	80.92
123		Kamis	30	81.54
124		Jumat	1	71.23
125		Sabtu	2	67.07
126		minggu	3	70.36
127		Senin	4	74.74
128		Selasa	5	66.94
129		Rabu	6	59.55
130		Kamis	7	56.61
131		Jumat	8	54.12
132		Sabtu	9	51.20
133		minggu	10	49.97
134		Senin	11	50.11
135		Selasa	12	48.03
136		Rabu	13	46.32
137		Kamis	14	46.12
138		Jumat	15	46.74
139	<b>Mei 2009</b>	Sabtu	16	46.64
140		minggu	17	55.69
141		Senin	18	60.32
142		Selasa	19	50.67
143		Rabu	20	52.87
144		Kamis	21	49.14
145		Jumat	22	45.70
146		Sabtu	23	46.66
147		minggu	24	43.42
148		Senin	25	44.55
149		Selasa	26	48.98
150		Rabu	27	43.01
151		Kamis	28	40.23
152		Jumat	29	39.17
153		Sabtu	30	37.21
154		minggu	31	37.92
155			Senin	1
156		Selasa	2	35.87
157		rabu	3	35.94

158	<b>Juni 2009</b>	kamis	4	37.20
159		jumat	5	37.09
160		sabtu	6	35.73
161		minggu	7	40.02
162		senin	8	36.46
163		selasa	9	37.13
164		rabu	10	46.84
165		kamis	11	44.41
166		jumat	12	40.72
167		sabtu	13	36.98
168		minggu	14	37.57
169		senin	15	36.01
170		selasa	16	35.80
173		rabu	17	43.82
172		kamis	18	35.87
173		jumat	19	35.21
174		sabtu	20	31.95
175		minggu	21	36.00
176		senin	22	33.20
177		selasa	23	31.76
178		rabu	24	33.82
179		kamis	25	31.07
180		jumat	26	30.37
181		sabtu	27	32.40
182	minggu	28	32.55	
183	senin	29	32.27	
184	selasa	30	29.22	
185	<b>Juli 2009</b>	rabu	1	33.20
186		kamis	2	27.00
187		jumat	3	28.43
188		sabtu	4	28.61
189		minggu	5	33.43
190		senin	6	31.35
191		selasa	7	30.05
192		rabu	8	28.24
193		kamis	9	28.45
194		jumat	10	29.11
195		sabtu	11	28.73
196		minggu	12	28.10
197		Senin	13	28.18

198		Selasa	14	27.27
199		Rabu	15	26.17
200		Kamis	16	26.93
201		Jumat	17	26.37
202		Sabtu	18	27.61
203		minggu	19	24.86
204		Senin	20	24.76
205		Selasa	21	24.32
206		rabu	22	24.92
207		kamis	23	28.94
208		jumat	24	22.75
209		sabtu	25	24.80
210		minggu	26	24.32
211		senin	27	25.42
212		selasa	28	26.14
213		rabu	29	24.88
214		kamis	30	23.27
215		jumat	31	23.75
216	<b>Agustus 2009</b>	sabtu	1	25.02
217		minggu	2	24.22
218		senin	3	24.23
219		selasa	4	26.15
220		rabu	5	26.17
221		kamis	6	24.55
222		jumat	7	21.74
223		sabtu	8	24.67
224		minggu	9	24.09
225		senin	10	24.94
226		selasa	11	27.20
227		rabu	12	31.65
228		kamis	13	25.59
229		jumat	14	24.97
230		sabtu	15	24.74
231		minggu	16	21.85
232		senin	17	23.93
233	selasa	18	23.70	
234	rabu	19	24.83	
235	kamis	20	23.70	
236	jumat	21	24.86	
237	sabtu	22	21.33	

238		minggu	23	24.10
239		senin	24	22.47
240		selasa	25	20.63
241		rabu	26	24.37
242		kamis	27	26.28
243		jumat	28	24.01
244		sabtu	29	21.85
245		minggu	30	24.06
246		senin	31	25.70
247	<b>September 2009</b>	selasa	1	22.47
248		rabu	2	21.16
249		kamis	3	21.08
250		jumat	4	20.20
251		sabtu	5	21.35
252		minggu	6	25.04
253		senin	7	26.56
254		selasa	8	22.81
255		rabu	9	19.99
256		kamis	10	21.02
257		jumat	11	21.47
258		sabtu	12	18.90
259		minggu	13	20.25
260		senin	14	22.45
261		selasa	15	19.82
262		rabu	16	18.55
263		kamis	17	18.18
264		jumat	18	18.93
265		sabtu	19	18.00
266		minggu	20	18.55
267	senin	21	20.36	
268	selasa	22	17.61	
269	rabu	23	17.59	
270	kamis	24	17.29	
271	jumat	25	18.75	
272	sabtu	26	18.58	
273	minggu	27	18.25	
274	senin	28	17.78	
275	selasa	29	17.85	
276	rabu	30	18.32	
277	kamis	1	18.44	

278	<b>Oktober 2009</b>	jumat	2	44.94
279		sabtu	3	29.14
280		minggu	4	27.27
281		senin	5	21.54
282		selasa	6	31.06
283		rabu	7	29.87
284		kamis	8	27.45
285		jumat	9	24.19
286		sabtu	10	27.10
287		minggu	11	29.31
288		senin	12	25.75
289		selasa	13	24.62
290		rabu	14	21.07
291		kamis	15	21.06
292		jumat	16	23.15
293		sabtu	17	24.39
294		minggu	18	27.26
295		senin	19	26.04
296		selasa	20	23.28
297		rabu	21	23.49
298		kamis	22	21.91
299		jumat	23	19.87
300		sabtu	24	37.21
301		minggu	25	57.03
302		senin	26	46.67
303		selasa	27	18.25
304		rabu	28	22.19
305		kamis	29	26.34
306		jumat	30	33.89
307		sabtu	31	29.83
308		<b>November</b>	minggu	1
309	senin		2	42.81
310	selasa		3	37.21
311	rabu		4	59.05
312	kamis		5	40.30
313	jumat		6	34.80
314	sabtu		7	48.05
315	minggu		8	50.97
316	senin		9	46.03
317	selasa		10	34.64



318	<b>2009</b>	rabu	11	31.81	
319		kamis	12	54.70	
320		jumat	13	59.78	
321		sabtu	14	42.09	
322		minggu	15	71.27	
323		senin	16	47.86	
324		selasa	17	47.24	
325		rabu	18	40.27	
326		kamis	19	51.78	
327		jumat	20	60.21	
328		sabtu	21	62.73	
329		minggu	22	58.04	
330		senin	23	59.86	
331		selasa	24	52.56	
332		rabu	25	40.83	
333		kamis	26	37.42	
334		jumat	27	32.15	
335		sabtu	28	29.70	
336		minggu	29	27.10	
337		senin	30	31.14	
338		<b>Desember 2009</b>	selasa	1	32.12
339			rabu	2	27.32
340			kamis	3	24.64
341			jumat	4	27.45
342			sabtu	5	45.23
343			minggu	6	108.24
344			senin	7	162.11
345			selasa	8	74.22
346			rabu	9	95.03
347			kamis	10	116.89
348			jumat	11	114.06
349			sabtu	12	127.90
350			minggu	13	73.24
351			senin	14	51.12
352			selasa	15	41.81
353			rabu	16	52.26
354			kamis	17	68.74
355	jumat		18	44.54	
356	sabtu		19	42.11	
357	minggu		20	45.82	

358		senin	21	37.98
359		selasa	22	37.98
360		rabu	23	35.81
361		kamis	24	33.83
362		jumat	25	33.71
363		sabtu	26	46.51
364		minggu	27	34.62
365		senin	28	51.37
366		selasa	29	56.91
367		rabu	30	47.19
368		kamis	31	44.54
369	<b>Januari 2010</b>	jumat	1	34.74
370		sabtu	2	35.53
371		minggu	3	49.16
372		senin	4	47.71
373		selasa	5	56.88
374		rabu	6	64.75
375		kamis	7	56.50
376		jumat	8	110.71
377		sabtu	9	56.24
378		minggu	10	70.44
379		senin	11	60.73
380		selasa	12	63.93
381		rabu	13	57.72
382		kamis	14	57.53
383		jumat	15	60.65
384		sabtu	16	61.86
385		minggu	17	71.15
386		senin	18	63.76
387		selasa	19	51.99
388		rabu	20	64.92
389		kamis	21	63.65
390		jumat	22	59.42
391		sabtu	23	107.38
392		minggu	24	80.32
393		senin	25	93.04
394		selasa	26	75.44
395		rabu	27	79.96
396		kamis	28	114.35
397		jumat	29	133.51

398		sabtu	30	143.42
399		minggu	31	184.53
400	<b>Februari 2010</b>	senin	1	142.00
401		selasa	2	95.07
402		rabu	3	95.04
403		kamis	4	79.71
404		jumat	5	68.08
405		sabtu	6	63.64
406		minggu	7	63.71
407		senin	8	61.95
408		selasa	9	75.86
409		rabu	10	220.14
410		kamis	11	91.02
411		jumat	12	78.74
412		sabtu	13	99.56
413		minggu	14	104.32
414		senin	15	89.12
415		selasa	16	78.81
416		rabu	17	63.75
417		kamis	18	87.53
418		jumat	19	114.68
419		sabtu	20	113.18
420		minggu	21	119.18
421		senin	22	167.75
422		selasa	23	140.33
423		rabu	24	136.96
424		kamis	25	108.63
425		jumat	26	93.78
426		sabtu	27	74.64
427		minggu	28	78.66
428	<b>Maret 2010</b>	senin	1	87.29
429		selasa	2	84.80
430		rabu	3	76.69
431		kamis	4	89.43
432		jumat	5	80.92
433		sabtu	6	70.90
434		minggu	7	75.06
435		senin	8	73.50
436		selasa	9	45.35
437		rabu	10	61.04

438		kamis	11	81.39
439		jumat	12	69.33
440		sabtu	13	60.84
441		minggu	14	58.77
442		senin	15	57.83
443		selasa	16	53.22
444		rabu	17	53.35
445		kamis	18	55.81
446		jumat	19	55.02
447		sabtu	20	84.08
448		minggu	21	58.43
449		senin	22	53.78
450		selasa	23	51.09
451		rabu	24	54.26
452		kamis	25	53.68
453		jumat	26	60.49
454		sabtu	27	67.25
455		minggu	28	77.86
456		senin	29	68.22
457		selasa	30	87.27
458		rabu	31	80.54
459	<b>April 2010</b>	kamis	1	124.99
460		jumat	2	97.86
461		sabtu	3	68.35
462		minggu	4	68.63
463		senin	5	74.19
464		selasa	6	72.23
465		rabu	7	66.50
466		kamis	8	65.79
467		jumat	9	63.45
468		sabtu	10	62.16
469		minggu	11	66.40
470		senin	12	67.08
471		selasa	13	63.94
472		rabu	14	58.03
473		kamis	15	55.22
474		jumat	16	50.64
475		sabtu	17	61.36
476		minggu	18	79.41
477		senin	19	71.47

478		selasa	20	60.18
479		rabu	21	62.59
480		kamis	22	62.50
481		jumat	23	64.39
482		sabtu	24	64.12
483		minggu	25	57.79
484		senin	26	52.22
485		selasa	27	60.40
486		rabu	28	53.21
487		kamis	29	49.56
488		jumat	30	47.16
489	<b>Mei 2010</b>	sabtu	1	43.89
490		minggu	2	40.32
491		senin	3	46.55
492		selasa	4	48.80
493		rabu	5	39.43
494		kamis	6	50.84
495		jumat	7	51.04
496		sabtu	8	55.95
497		minggu	9	67.20
498		senin	10	66.64
499		selasa	11	54.40
500		rabu	12	50.03
501		kamis	13	49.02
502		jumat	14	56.42
503		sabtu	15	49.66
504		minggu	16	51.25
505		senin	17	66.88
506		selasa	18	73.99
507		rabu	19	58.07
508	kamis	20	59.91	
509	jumat	21	54.85	
510	sabtu	22	50.00	
511	minggu	23	56.82	
512	senin	24	58.98	
513	selasa	25	62.05	
514	rabu	26	74.73	
515	kamis	27	59.79	
516	jumat	28	50.57	
517	sabtu	29	48.87	

518		minggu	30	58.84
519		sabtu	31	62.84
520	<b>Juni 2010</b>	selasa	1	51.23
521		rabu	2	49.37
522		kamis	3	44.15
523		jumat	4	45.97
524		sabtu	5	44.93
525		minggu	6	43.20
526		senin	7	43.70
527		selasa	8	55.66
528		rabu	9	51.67
529		kamis	10	50.30
530		jumat	11	52.06
531		sabtu	12	44.62
532		minggu	13	41.51
533		senin	14	43.79
534		selasa	15	37.80
535		rabu	16	36.64
536		kamis	17	36.07
537		jumat	18	31.44
538		sabtu	19	34.71
539		minggu	20	33.78
540		senin	21	34.95
541		selasa	22	32.96
542		rabu	23	32.37
543		kamis	24	30.91
544		jumat	25	30.65
545		sabtu	26	30.81
546		minggu	27	30.74
547		senin	28	30.93
548		selasa	29	28.90
549		rabu	30	30.04
550	<b>Juli 2010</b>	kamis	1	27.96
551		jumat	2	28.57
552		sabtu	3	33.82
553		minggu	4	31.25
554		senin	5	32.82
555		selasa	6	30.82
556		rabu	7	27.73
557		kamis	8	26.52

558		jumat	9	26.65
559		sabtu	10	27.09
560		minggu	11	28.28
561		senin	12	27.83
562		selasa	13	26.57
563		rabu	14	26.48
564		kamis	15	26.45
565		jumat	16	24.10
566		sabtu	17	24.72
567		minggu	18	24.93
568		senin	19	25.05
569		selasa	20	26.34
570		rabu	21	27.02
571		kamis	22	31.22
572		jumat	23	33.59
573		sabtu	24	29.14
574		minggu	25	29.04
575		senin	26	25.40
576		selasa	27	28.55
577		rabu	28	24.14
578		kamis	29	26.87
579		jumat	30	27.49
580		sabtu	31	25.19
581	<b>Agustus 2010</b>	minggu	1	22.14
582		senin	2	22.60
583		selasa	3	24.62
584		rabu	4	24.79
585		kamis	5	25.14
586		jumat	6	23.86
587		sabtu	7	24.02
588		minggu	8	24.67
589		senin	9	24.63
590		selasa	10	23.50
591		rabu	11	24.00
592		kamis	12	24.45
593		jumat	13	23.23
594		sabtu	14	23.37
595		minggu	15	21.56
596		senin	16	23.61
597		selasa	17	23.24

598		rabu	18	22.18
599		kamis	19	23.06
600		jumat	20	20.07
601		sabtu	21	20.65
602		minggu	22	24.00
603		senin	23	22.58
604		selasa	24	21.74
605		rabu	25	22.11
606		kamis	26	21.23
607		jumat	27	20.75
608		sabtu	28	21.23
609		minggu	29	20.34
610		senin	30	20.82
611		selasa	31	20.05
612	<b>September 2010</b>	rabu	1	20.55
613		kamis	2	20.46
614		jumat	3	22.70
615		sabtu	4	19.96
616		minggu	5	20.86
617		senin	6	19.21
618		selasa	7	20.05
619		rabu	8	21.16
620		kamis	9	20.33
621		jumat	10	20.00
622		sabtu	11	19.68
623		minggu	12	17.94
624		senin	13	19.79
625		selasa	14	22.94
626		rabu	15	44.35
627		kamis	16	38.24
628		jumat	17	25.78
629		sabtu	18	25.96
630		minggu	19	23.62
631		senin	20	22.83
632		selasa	21	26.14
633		rabu	22	23.24
634		kamis	23	23.06
635		jumat	24	22.51
636		sabtu	25	20.40
637		minggu	26	17.14



638		senin	27	19.19
639		selasa	28	18.82
640		rabu	29	19.63
641		kamis	30	24.43
642	<b>Oktober 2010</b>	jumat	1	21.30
643		sabtu	2	21.52
644		minggu	3	20.72
645		senin	4	19.16
646		selasa	5	20.93
647		rabu	6	19.88
648		kamis	7	20.10
649		jumat	8	19.68
650		sabtu	9	19.78
651		minggu	10	39.86
652		senin	11	27.17
653		selasa	12	25.99
654		rabu	13	25.24
655		kamis	14	21.71
656		jumat	15	20.41
657		sabtu	16	19.59
658		minggu	17	19.41
659		senin	18	19.44
660		selasa	19	20.05
661		rabu	20	20.55
662		kamis	21	18.52
663		jumat	22	21.20
664		sabtu	23	22.47
665		minggu	24	31.74
666		senin	25	21.34
667		selasa	26	20.95
668		rabu	27	20.05
669		kamis	28	20.01
670		jumat	29	22.52
671		sabtu	30	20.55
672		minggu	31	20.55
673	<b>November 2010</b>	senin	1	19.64
674		selasa	2	18.93
675		rabu	3	18.57
676		kamis	4	17.30
677		jumat	5	18.07

678		sabtu	6	18.04
679		minggu	7	23.03
680		senin	8	20.38
681		selasa	9	20.55
682		rabu	10	20.55
683		kamis	11	20.55
684		jumat	12	20.55
685		sabtu	13	20.55
686		minggu	14	20.55
687		senin	15	33.39
688		selasa	16	22.98
689		rabu	17	23.56
690		kamis	18	32.94
691		jumat	19	39.81
692		sabtu	20	56.84
693		minggu	21	40.18
694		senin	22	28.14
695		selasa	23	32.39
696		rabu	24	54.42
697		kamis	25	47.05
698		jumat	26	44.33
699		sabtu	27	40.07
700		minggu	28	32.16
701		senin	29	26.83
702		selasa	30	23.61
703	<b>Desember 2010</b>	rabu	1	23.14
704		kamis	2	26.43
705		jumat	3	27.73
706		sabtu	4	37.31
707		minggu	5	28.15
708		senin	6	28.32
709		selasa	7	28.55
710		rabu	8	34.19
711		kamis	9	21.34
712		Jumat	10	21.57
713		Sabtu	11	20.87
714		minggu	12	20.84
715		Senin	13	21.30
716		Selasa	14	18.67
717		Rabu	15	19.03

718	Kamis	16	21.44
719	Jumat	17	19.26
720	Sabtu	18	19.43
721	minggu	19	20.22
722	Senin	20	22.34
723	Selasa	21	26.99
724	Rabu	22	25.95
725	Kamis	23	60.34
726	Jumat	24	63.55
727	Sabtu	25	46.59
728	Minggu	26	34.50
729	Senin	27	33.70
730	Selasa	28	43.09
731	Rabu	29	55.09



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**Lampiran 2.** Bobot awal dan bobot akhir peramalan debit *inflow* harian umum arsitektur terbaik (3- 15 - 1)

**A. Bobot awal lapisan *input* menuju Lapisan *hidden***

$v_j^i$	$i = 1$	$i=2$	$i=3$
$j = 1$	1.2027	-12.609	2.0611
$j = 2$	-1.2558	8.9742	5.9319
$j = 3$	4.4429	-6.8701	0.681
$j = 4$	4.3652	-7.2427	5.0567
$j = 5$	6.2765	3.437	-6.1937
$j = 6$	8.8205	-4.1625	-2.3204
$j = 7$	0.76627	-1.0439	9.6106
$j = 8$	8.6109	-9.8584	4.0965
$j = 9$	-7.6543	11.429	-0.91055
$j = 10$	11.629	2.0069	1.6442
$j = 11$	-7.7511	-2.5945	9.9778
$j = 12$	-6.359	0.39827	-11.318
$j = 13$	8.2836	-3.6607	2.2678
$j = 14$	5.8341	-1.6495	-11.057
$j = 15$	-10.632	-8.0159	-2.4753

**B. Bobot bias awal lapisan *input* menuju lapisan *hidden***

$b_j^h$	$h = 1$
$j = 1$	1.6844
$j = 2$	-6.3729
$j = 3$	2.4781
$j = 4$	-9.0627
$j = 5$	-9.1373
$j = 6$	-7.4777
$j = 7$	-10.358
$j = 8$	-0.73011
$j = 9$	-2.2004
$j = 10$	-2.6014
$j = 11$	-4.6121
$j = 12$	7.8073
$j = 13$	-4.5859
$j = 14$	5.3737
$j = 15$	6.3455

**C. Bobot awal lapisan *hidden* menuju lapisan *output***

$w_1^0$	$w_2^0$	$w_3^0$	$w_4^0$	$w_5^0$	$w_6^0$
0.48913	-0.46411	-0.12015	0.86676	0.36666	-0.57488

$w_7^0$	$w_8^0$	$w_9^0$	$w_{10}^0$	$w_{11}^0$	$w_{12}^0$
0.67848	0.25757	-0.73245	-0.58573	0.2144	0.25978

$w_{13}^0$	$w_{14}^0$	$w_{15}^0$
-0.25905	0.1503	-0.09715

**D. Bobot bias awal lapisan *hidden* menuju lapisan *output***

$b^0$	-0.91221
-------	----------

**E. Bobot akhir lapisan *input* menuju lapisan *hidden***

$W_j^i$	$i = 1$	$i = 2$	$i = 3$
$j = 1$	1.2004	-12.61	2.0551
$j = 2$	-1.2696	8.9596	5.9167
$j = 3$	4.4255	-6.8832	0.67468
$j = 4$	4.3494	-7.2615	5.0195
$j = 5$	6.351	3.4856	-6.1645
$j = 6$	8.7065	-4.2273	-2.3612
$j = 7$	0.80793	-1.0025	9.6295
$j = 8$	8.5975	-9.8603	4.0718
$j = 9$	-7.6892	11.383	-0.93382
$j = 10$	11.559	1.9555	1.5895
$j = 11$	-7.7475	-2.5932	9.978
$j = 12$	-6.3473	0.41745	-11.313
$j = 13$	8.2771	-3.6627	2.2609
$j = 14$	5.8333	-1.6449	-11.054
$j = 15$	-10.61	-8.0033	-2.4584

**F. Bobot bias akhir lapisan *input* menuju lapisan *hidden***

$b_j^h$	$h = 1$
$j = 1$	1.6336
$j = 2$	-6.419
$j = 3$	2.4459
$j = 4$	-9.1284
$j = 5$	-9.0543
$j = 6$	-7.5982

$j=7$	-10.309
$j=8$	-0.81429
$j=9$	-2.2779
$j=10$	-2.7527
$j=11$	-4.6127
$j=12$	7.8089
$j=13$	-4.6125
$j=14$	5.3745
$j=15$	6.3817

**G. Bobot akhir lapisan *hidden* menuju lapisan *output***

$v_1^0$	$v_2^0$	$v_3^0$	$v_4^0$	$v_5^0$	$v_6^0$
0.10682	-0.00022498	-0.16424	0.35433	0.38346	-0.31968

$v_7^0$	$v_8^0$	$v_9^0$	$v_{10}^0$	$v_{11}^0$	$v_{12}^0$
0.15498	0.18974	-0.0098477	0.35347	-0.11281	0.026006

$v_{13}^0$	$v_{14}^0$	$v_{15}^0$
0.068076	0.51828	-0.0077193

**H. Bobot bias akhir lapisan *hidden* menuju lapisan *output***

$b^0$	-0.4587
-------	---------

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**Lampiran 3.** Bobot awal dan bobot akhir peramalan debit *inflow* mingguan arsitektur terbaik (3- 5 - 1)

**A. Bobot awal lapisan input menuju Lapisan hidden**

$W_j^i$	$i = 1$	$i=2$	$i=3$
$j = 1$	-6.0233	-0.30182	1.3464
$j = 2$	3.7561	-7.5519	6.3581
$j = 3$	9.3378	3.338	3.5381
$j = 4$	4.9624	-2.2805	8.4986
$j = 5$	3.3965	-6.2863	8.0985

**B. Bobot bias awal lapisan input menuju lapisan hidden**

$b_j^h$	$h = 1$
$j = 1$	10.99
$j = 2$	-2.0543
$j = 3$	-8.4543
$j = 4$	-1.4121
$j = 5$	0.80884

**C. Bobot awal lapisan hidden menuju lapisan output**

$v_1^0$	$v_2^0$	$v_3^0$	$v_4^0$	$v_5^0$
-0.90144	0.14211	0.40171	0.92458	0.50104

**D. Bobot bias awal lapisan hidden menuju lapisan output**

$b^0$	0.47999
-------	---------

**E. Bobot akhir lapisan input menuju Lapisan hidden**

$W_j^i$	$i = 1$	$i=2$	$i=3$
$j = 1$	-6.511	-2.071	4.4533
$j = 2$	3.3555	6.1732	-7.81
$j = 3$	-4.2204	-5.635	7.7981
$j = 4$	9.469	-1.4963	2.6798
$j = 5$	3.8477	7.7064	-6.5559

**F. Bobot bias akhir lapisan *input* menuju lapisan *hidden***

$b_j^h$	$h = 1$
$j = 1$	9.814
$j = 2$	-5.0029
$j = 3$	-0.88064
$j = 4$	-2.5332
$j = 5$	0.99939

**G. Bobot akhir lapisan *hidden* menuju lapisan *output***

$v_1^0$	$v_2^0$	$v_3^0$	$v_4^0$	$v_5^0$
-0.22696	-0.26188	-0.020992	0.75925	-0.2578

**H. Bobot bias akhir lapisan *hidden* menuju lapisan *output***

$b^0$	0.44869
-------	---------



**Lampiran 4.** Bobot awal peramalan debit *inflow* klasifikasi hari arsitektur (selasa) terbaik (3- 5 - 1)

**A. Bobot awal lapisan input menuju lapisan hidden**

$W_j^i$	$i = 1$	$i=2$	$i=3$
$j = 1$	-4.4497	2.9826	3.7739
$j = 2$	4.9965	-2.1628	0.89362
$j = 3$	-4.0817	6.3311	-3.932
$j = 4$	-6.5511	-0.60526	2.7633
$j = 5$	-8.5049	-1.168	4.3784

**B. Bobot bias awal lapisan input menuju lapisan hidden**

$b_j^h$	$h = 1$
$j = 1$	5.563
$j = 2$	-8.0128
$j = 3$	1.8661
$j = 4$	-3.6533
$j = 5$	-2.0979

**C. Bobot awal lapisan hidden menuju lapisan output**

$v_1^0$	$v_2^0$	$v_3^0$	$v_4^0$	$v_5^0$
0.41894	-0.14222	-0.39077	-0.62069	-0.61314

**D. Bobot bias awal lapisan hidden menuju lapisan output**

$b^0$	0.36445
-------	---------

**E. Bobot akhir lapisan input menuju lapisan hidden**

$W_j^i$	$i = 1$	$i=2$	$i=3$
$j = 1$	-4.321	3.0607	3.7557
$j = 2$	6.4683	-1.052	0.64875
$j = 3$	-5.7714	3.6535	-5.0675
$j = 4$	-5.9832	-0.49999	2.8662
$j = 5$	-8.1174	-1.6315	3.952

**F. Bobot bias akhir lapisan *input* menuju lapisan *hidden***

$b_j^h$	$h = 1$
$j = 1$	5.6093
$j = 2$	-7.113
$j = 3$	1.9519
$j = 4$	-2.884
$j = 5$	-1.4117

**G. Bobot akhir lapisan *hidden* menuju lapisan *output***

$v_1^0$	$v_2^0$	$v_3^0$	$v_4^0$	$v_5^0$
0.21835	0.48746	-0.34839	-0.40144	-0.8771

**H. Bobot bias akhir lapisan *hidden* menuju lapisan *output***

$b^0$	0.2637
-------	--------



**Lampiran 5.** Perbandingan data aktual dan *output* jaringan arsitektur terbaik

**A. Peramalan Harian Umum Arsitektur Terbaik (3-15-1)**

<b>No</b>	<b>Data Aktual</b>	<b>Output JST</b>	<b>Error</b>
1	0.12868	0.13197	-0.003296
2	0.12853	0.13122	-0.0026918
3	0.12422	0.12818	-0.0039564
4	0.12613	0.13154	-0.0054109
5	0.12784	0.13109	-0.0032533
6	0.12319	0.12716	-0.0039614
7	0.12373	0.12999	-0.0062655
8	0.11683	0.12297	-0.0061324
8	0.12464	0.13297	-0.0083278
9	0.12323	0.12646	-0.003227
10	0.1192	0.12612	-0.0069237
11	0.12255	0.12986	-0.0073129
12	0.11116	0.11834	-0.0071858
13	0.11337	0.12634	-0.012971
14	0.12613	0.13283	-0.0066983
15	0.12868	0.13197	-0.003296
...	...	...	...
...	...	...	...
...	...	...	...
132	0.10807	0.11712	-0.0090498
133	0.10872	0.12361	-0.014885
134	0.11173	0.123	-0.01127
135	0.1198	0.12915	-0.0093427
136	0.13751	0.14192	-0.0044028
137	0.13355	0.13164	0.0019188
138	0.26453	0.29848	-0.033949
139	0.27676	0.26271	0.014053
140	0.21216	0.20968	0.0024823
141	0.16612	0.16801	-0.0018938
142	0.16307	0.17358	-0.010504
143	0.19883	0.19145	0.0073847
144	0.24454	0.23839	0.0061512

## Lampiran 5. (Lanjutan)

### B. Peramalan Mingguan Arsitektur Terbaik (3-5-1)

No	Data Aktual	Output JST	Error
1	0.13485	0.13315	0.0017027
2	0.12724	0.1238	0.0034372
3	0.12068	0.1174	0.0032822
4	0.11629	0.11358	0.0027117
5	0.10954	0.10431	0.0052298
6	0.16935	0.16561	0.003738
7	0.12581	0.12732	-0.001509
8	0.11649	0.1093	0.0071855
8	0.12972	0.12138	0.0083385
9	0.12984	0.13314	-0.0032959
10	0.12451	0.11475	0.0097607
11	0.11684	0.11798	-0.0011475
12	0.10494	0.098933	0.0060105
13	0.11464	0.10957	0.0050668
14	0.2164	0.19469	0.021708
15	0.2441	0.26644	-0.022342
16	0.16217	0.15706	0.0051105
17	0.14535	0.15647	-0.011115
18	0.11048	0.10584	0.0046463
19	0.24573	0.24882	-0.0030839
20	0.13485	0.13315	0.0017027

**C. Peramalan Klasifikasi Hari (Selasa) Arsitektur Terbaik (3-5-1)**

No	Data Aktual	Output JST	Error
1	0.1367	0.13606	0.0006456
2	0.12692	0.12453	0.0023921
3	0.11591	0.11268	0.0032288
4	0.11591	0.11353	0.0023738
5	0.13475	0.13582	-0.0010695
6	0.15561	0.16041	-0.0048058
7	0.10789	0.10472	0.0031688
8	0.12164	0.1211	0.00054548
8	0.15463	0.15708	-0.0024516
9	0.11591	0.11368	0.0022267
10	0.12177	0.11665	0.0051253
11	0.1086	0.104	0.0046037
12	0.11917	0.116	0.0031643
13	0.13501	0.12539	0.009617
14	0.19635	0.20996	-0.013611
15	0.13911	0.1355	0.0036102
16	0.17132	0.17698	-0.0056624
17	0.10691	0.10065	0.0062551
18	0.16115	0.16321	-0.0020619
19	0.2661	0.28347	-0.017364
20	0.1367	0.13606	0.0006456

## Lampiran 6. Source Code JST Backpropagation Dengan MATLAB

### **%PERAMALAN INFLOW DEBIT AIR WADUK DENGAN BACKPROPAGATION NEURAL NETWORK**

%INPUT DATA RAMALAN (memanggil data debit inflow dari excel)

```
Ptraining = xlsread('D:\News\Harian.xls',3,'C:E');
```

```
Ttraining = xlsread('D:\News\Harian.xls',3,'B:B');
```

%NORMALISASI DATA TRAINING JST BACKPROPAGATION

```
min_p = 17.14;
```

```
max_p = 227.19;
```

```
Ptrn = (((0.8)*(Ptraining - min_p))./(max_p - min_p))+0.1;
```

```
Ttrn = (((0.8)*(Ttraining - min_p))./(max_p - min_p))+0.1;
```

```
pn = Ptrn';
```

```
tn = Ttrn';
```

%MEMBANGUN JARINGAN FEEDFORWARD

```
net = newff(minmax(pn),[5 1],  
{'logsig','purelin','traingdx','learnqdm'});
```

%BOBOT AWAL TIAP LAPISAN DAN BIAS

```
BOinput = net.IW{1,1};
```

```
BObias = net.b{1};
```

```
BOhidden = net.LW{2,1};
```

```
BOhiddenbias = net.b{2};
```

%INISIALISASI PARAMETER ARSITEKTUR JARINGAN

```
net.trainParam.show = 100;
```

```
net.trainParam.epochs = 10000;
```

```
net.trainParam.lr = 0.5;
```

```
net.trainParam.goal = 0.001;
```

%TAHAP TRAINING (PELATIHAN)

```
net = train(net,pn,tn);
```

%BOBOT AKHIR HASIL PELATIHAN

```
BoAkhirinput = net.IW{1,1};
```

```
BoAkhirbias = net.b{1};
```

```
BoAkhirlayer = net.LW{2,1};
```

```
BoAkhirlayerbias = net.b{2};
```

%SIMULASI DAN HASIL MSE TRAINING (PELATIHAN)

```
y = sim(net,pn);
```

```
H = [(1:size(pn,2))' tn' y' (tn'-y)'];
```

```
MSE_training = mse(tn'-y');
```



```

%PLOT KURVA HASIL PELATIHAN
targ = tn';
outp = y';
x = 1:1:584;
plot(x,targ,x,outp);
legend ('Target','Output');
title ('Perbandingan Target dan Output Training JST
Backpropagation');
xlabel('Hari Senin - (2009 - 2010)');
ylabel ('Debit Inflow Waduk Sengguruh');

%CARI MAPE TRAINING
Errortra = tn'-y';
PEtra = (abs(Errortra)./tn')*100;
MAPE_training = mean(abs(PEtra))

%LOAD DATA TESTING
Ptesting = xlsread('D:\News\Harian.xls',4,'C:E');
Ttesting = xlsread('D:\News\Harian.xls',4,'B:B');

%NORMALISASI DATA TESTING
Ptes = ((0.8*(Ptesting - min_p))./(max_p - min_p))+ 0.1;
Ttes = ((0.8*(Ttesting - min_p))./(max_p - min_p))+ 0.1;
Qn = Ptes';
Tn = Ttes';

%SIMULASI JST DENGAN DATA TESTING (TAHAP TESTING)
bn = sim(net,Qn);

% OUTPUT JST (RAMALAN) HASIL TESTING DAN ERROR
L = [(1:size(Qn,2))' Tn' bn' (Tn'-bn)];
MSE_testing = mse(Tn'- bn');

%PLOT DATA AKTUAL DAN DATA AKTUAL
targs = Tn';
outps = bn';
a = 1:1:144;
plot(a,targs,a,outps);
legend ('Target','Output');
title ('Perbandingan Target dan Output Testing JST
Backpropagation');
xlabel('Hari');
ylabel ('Inflow Debit');

%MAPE PROSES TESTING
Errortes = Tn'-bn';

```

```
PEtes = (abs(Errorortes)./Tn')*100;  
MAPE_testing = mean(abs(PEtes))  
%DENORMALISASI HASIL TESTING MENJADI DATA ASLI DEBIT  
INFLOW
```

```
min_p = 227.19;  
max_p = 17.14;  
max_r = 0.9  
min_r = 0.1;  
R = (((bn - min_r)*(227.19 - 17.14))./(max_r - min_r))+17.14);  
Ramalan = R';
```

