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,QWHUQDWLRQDO 5HVHDUFK ZZZZLWXXVHR RI 6WDYDQJHU \$6

)RURUG

'HQQH UDSSRUWHQ SUHVHQWHUHU UHVXOWDWHU IUD HO
KDU Y UW HQ SU;YHRUGQLQJ L WL I\ONHU VDPILQDQ
I\ONHVNRPPXQHU .XOWXUNRUW IRU XQJGRP HU HW NXC
ELOOLJHUUH ELOOHWWHU WLO HW EUHGW VSHNWHU DY N
n EHQ\WWH VHJ RIWHUH DY NXOWXUWLOEXGHQH RJ n U
EHGUH WLOJDQJHQ WLO RJ ;NH EUXN DY NXOWXUWLO
JMHQQRPI;UW DY ,QWHUQDWLRQDO 5HVHDFK ,QVWLWXV
VRP KDU LYHUNVDWW HYDOXHULQJVDUEHLGHW Sn RSS
..'

, NDUWOHJLLQJHQ HU GHW ODJW YHNW Sn n XQGHUV;NH
L GH WL I\ONHVNRPPXQHQH VDPW HUIDULQJHU GH KDU
GH KDU P;WW RJ UHVXOWDWHU GH KDU RSSQnGG 'HUQH
LQYROYHUWH YLUNVRPKHWHU VHU Sn NXOWXUNRUWR
WLOJMHQJHOLJ VWDWLVLNN IRU DQVNDIIHOVH RJ EUX
EDVLV IRU UDSSRUWHQ VRP DYVOXWQLQJVLV JLU H
NXOWXURUGQLQJHQ KDU RSSQnGG PnOVHWWLQJHQH

9L YLO WDNNH DOOH NRRUGLQDWRUHU L I\ONHVNRPPXC
VNDIIHW WLOYHLH LQIRUPDVMRQ 9L YLO RJVn WDNNH G
L IRNXVJUXSSHU RJ GH YLUNVRPKHWHQH VRP VYDUWH

.ROOHJD 1LOV \$VOH %HUJVJDUG KDU OHVW XWGUDJ I
NRPPHQWUHU *HRUJ \$UQHVDWG YHG +;JVNXOHQ L 6I
NXOWXUUnGV HNVWHUQH NRQVXOHQW RJ OHVW RJ NRPP
JRGH LQQVSLOO RJ WLSV (Q V UOLJ WDNN JnU WLO I
SURVMHNWHWV NYDOLWHWVVLNUHU RJ KDU JLWW JRGH
(QGHOLJ YLO YL WDNNH 1RUVN NXOWXUUnG IRU RSSGUD

6WDYDQJHU MXQL

\$QGHUV 9DVVHQGHQ SURVMHNWOHGHU

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)RUVWnHOVH DY RSSGUDJHW RJ GLVSRVLVMRQ IRU

8QJGRP V NXOWXUYDQHU

)\ONHVNRPXQH QV UROOH L NXOWXUSROLWLN NHQ

'DWDPDWHULDOH

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.RUWOjV RUGQLQJ IDVWH nUOLJH WLOVNXGG \$XV 5RPVGDO

.RUWHW KHQWHV I\VLVN NU ELOOHWWHQ UHIX RJ %XVNHUXG

%HVN MHGHQ LQQVDWV)UD UHVLJQDVMRQ RJ HW 9HVW \$JGHU

/LWHQ LQQVDWV ± VPDOW NXOWXUEHJUHS +RUGD

6WRU LQQVDWV ± EUHGW NXOWXUEHJUHS 1RUGOD

%UHG PnOJUXSSH EUHGW NXOWXUEHJUHS 'VWIRC

(OHYHU VHOJHU NRUWHW WLO HOHYHU 7UjQGHOD

.RUW RSSVXPPHULQJ DY I\ONHVNRPXQH QHV HUID

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81*'206 6<16381.7(5 3c .8/785.257(7 ± 52*\$/\$1' 620 &\$6(

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)RUVNMHOOHU PHOORP I\ONHU

1RHQ I\ONHU VWjUUH XWIRUGULQJHU HQQ DQGUH

2P n YHNNH LQWHUHVH IRU NXOWXUNRUWHW

%\ RJ ODQG

)LQNXOWXU' RJ 'SRSXO UNXOWXU'
1RHQ LQQVSLOO WLO I\ONHVNRPXQHQHV YLGHUH
(Q RYHURUGQHW YXUGHULQJ DY NXOWXUNRUWRUG
\$OWHUQDWLYHU IRU NXOWXUNRUWRUGQLQJHQ

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,QWHUVMXJXLGH ± NRRUGLQDWRUHU L I\ONHVNRPXQH
,QWHUVMXJXLGH ± IRNXVJUXSSHU PHG XQJGRP L 5RJD
6S;UUHVNMHPD IRU ZHE XQGHUV;NHOVH EODQW NXOW

)LJXUHU RJ WDEHOOHU

)LJXU *MHQQRPVQLWWOLJ DQWDOO EHV;N WLO XOLNH

)LJXU (QGULQJ L XQJGRP V EHV;N WLO YLUNVRPKHWHG
NXOWXUNRUWRUGQLQJHQ \$QWDOO VYDU

)LJXU (QGULQJ L XQJGRP V EHV;N WLO YLUNVRPKHWHG
NXOWXUNRUWRUGQLQJHQ \$QWDOO VYDU NDWHJRULV

)LJXU 9LO GX DQEHIDOH DQGUH DUUDQJ;UHU n Y UH
VYDU

)LJXU 5HIXVMRQVXWEHWDOLQJHU RJ DQWDOO VROJWH

)LJXU %LOOHWWNM;S KRV DUUDQJ;UHU LQQHQIRU XW
VROJWH NXOWXUNRUWELOOHWWHU

)LJXU 'LVWULEXHUWH XQJGRP VNXOWXUNRUW L SURVH
DQWDOO nUVYHUN NQ\WWHW WLO RUGQLQJHQ L I\ONH

)LJXU \$QGHO DY PnOJUXSSHQ VRP KDU VNDIIHW VHJ
SHUVRQ L PnOJUXSSHQ L VHNV I\ONHU

7DEHOO 2YHUVLNW RYHU XWIRUPLQJ DY NXOWXUNRUW

,QWHUQDWLRQDO 5HVHDUFK ZZZWUWXVHR RI 6WDYDQJHU \$6

6DPPHQGUDJ

'XOWXUNRUW IRU XQJGRP' HU HW NXOWXUSROLWLVN W
HW EUHGW VSHNWHU DY NXOWXUDUUDQJHPPHQWHU .XOW
HU VDPILQDQVLHUW PHOORP I\ONHVNRPXPQHU RJ .XOWX

)RUPnOHW PHG RUGQLQJHQ HU n UHNUXWWHUH XQJGRP
EHQ\WWH VHJ PHU DY NXOWXUWLOEXGHQ NRUW VD
NXOWXUWLOEXG EODQW XQJGRP

'HW IRUHOLJJHU In NRQNUHWH EHVNULYHOVHU DY RYHU
IRUVWnHOVH DY RUGQLQJHQ NDQ RYHURUGQHWH PnOV
EHGUHW IRUPHOW NXOWXUWLOEXG WLO XQJGRP jN
EUXN DY NXOWXUWLOEXG XQJGRP LNNH YDQOLJYLV EH
NXOWXUWLOEXG RJ EUXN

..' KDU ODQJW Sn YHL RYHUODWW WLO KYHU HQNHOW
RUGQLQJHQ .XOWXUNRUWRUGQLQJHQ KDU Y UW LPSOH
GH I\ONHGH , QRHQ I\ONHU OLJJHU GHW HW VY UW E
I\ONHU RSHUHUHU PHG HW VPDOHUH 0nOJUXSSHQV DC
PHOORP I\ONHU 9LGHUH KDU QRHQ I\ONHU NRUWOjVH
IXQJHUHU VRP NXOWXUNRUW PHQV DQGUH KDU I\VLVN
JUDWLW DQGUH VWHGHU NRVWHU GHW NURQHU L K
IRUVNMHOOLJH

9nU HYDOXHULQJ HU EDVHUW Sn IjOJHQGH GDWDPDWHU
NRRUGLQDWRUHU IRU NXOWXUNRUWHW IRNXVJUXSSHU
I\ONHGHV UDSSRUWHU WLO ..' RJ HQ ZHE XQGHUVjNHOV

, GHW IjOJHQGH JMHQJLV QRHQ VHQWUDOH IXQQ L I
IUHPKHYHU DW DUEHLGHW PHG NXOWXUNRUWHW KDU YL
WHUUHQJ' 7LO WURVV IRU VY UW IRUVNMHOOLJH PRGH
VWHGHU HU OLWH NMHQW EODQW XQJGRP DW PnOJ
PDUNHGVIjULQJ 'HW KDU YLVW VHJ n Y UH YDQVNHOLJ
RUGQLQJHQ NMHQW HQQ GHW PDQ DQWRN IjU RUGQLQJ
YDULDVMRQHU PHOORP I\ONHGH L GHQ IRUVWDQG DW
QRHQ I\ONHU PHQV Q U KDU VNDIIHW VHJ GHW L HW
YLGHUH NODUW VRP HQ E\RUGQLQJ .XOWXUWLOEXG WL
VRP DWWUDNWLW L E\HQH PHQ LNNH L GLVWULNWHQH
VHJ RJ EUXNHU NXOWXUNRUWHW)RUVNMHOOHQ PHOO
I\ONHU WLO WURVV IRU GH XOLNH PRGHOOHQH HQ KDU
NXOWXUNRUWHW Vn ODQJW HU UHODWLY EHVNMHGHQ
WLOEXG VRP LNNH VHU XW WLO n EHQ\WWHV L QHYQH
'SRSXO UNXOWXUHOOH' DNWLYLWHWHU 'HW HU L GHW
EnGH LQWHUHVHGH IRU RJ EUXNHQ DY NXOWXUNRUWHW

1nU GHW JMHOGHU GH ILUH RYHURUGQHWH PnOVHWWLQ
YL JUXQQ WLO n PHQH DW NXOWXUNRUWRUGQLQJHQ Vn
RSSQnGG GLVVH +HU Vndo GHW LPLGOHUWLG RJVn XQ
YDULJKHW RJ EHVNMHGHQ LQQVDWV VDPW DW LQWHUHV
VWHGHU

%DVHUW Sn GHQQH NRQNOXVMRQHQ VNLVVHUHU RJ GLV
DUEHLGHW \$.XOWXUNRUWRUGQLQJHQ DYYLNOHV %

OHJJHV WLO UHOHYDQWH NRPPXQHU 2UGQLQJHQ SU
.XOWXUNRUWRUGQLQJHQ YLGHUHI;UHV L GDJHQV UDF
RUGQLQJHQ EDVHUV Sn HUIDULQJHQH IUD SU;YHSHULRG

,QQOHGQLQJ

%DNJUXQQ

`.XOWXUNRUW IRU XQJGRP` HU HW NXOWXUSROLWLVN W
HW EUHGW VSHNWHU DY NXOWXUDUUDQJHPHQWHU .XOW
HU VDPILQDQVLHUW PHOORP JMHOGHQGH I\ONHVNRPPXC

)RUPnOHW PHG RUGQLQJHQ HU n UHNUXWWHUH XQJGRF
EHQ\WWH VHJ PHU DY NXOWXUWLOEXGHQ NRUW VD
NXOWXUWLOEXG EODQW XQJGRP , 6WRUWLQJVSURSRV
'>I@RUPnOHW PHG RUGQLQJHQ HU n JMjUH GHW ULPHOL
RJ NXOWXUWLOEXG .XOWXU RJ NLUNHGHSDUWHPHQ
NXOWXUNRUW VLNUDU XQJGRP ELOOHJH ELOO'HWWDU W
..' SUHVVHPHOGLQJ QU 6HQWUDOW L RUGQLQ
jNRQRPLVNH EDUULHUHU PRW XQJGRP V EUXN DY NXOWX
'>« @W DOOH XQJH VUDO VLNHUV PXOLJKHWHQ WLO n E
'HW V\QHV n Y UH jQVNHW EnGH DEUHXQWGRP
NXOWXUWLOEXG RJQDMXGHWXNBOORHSXQDUHNN 'HW VLVV
NODUW XWWU\NW IUD GHSDUWHPHQWHWV VLGH 7LOEXG
.RQNUHW LQQHKROGHU GHW EO D LGUHWVVDUUDQJ
NXQVWXWVWLOOLQJHU RJ WHDWHU

.XOWXUNRUWRUGQLQJHQ NDQ VHHV Sn EDNJUXQQ DY V
%DUQH RJ IDPLOLHGHSUWHPHQWHWV VWRUWLQJVPHO
XQJGRP L 1RUJH >N@XQMW GRJWNXWQXUDNWLYLW
EDUQ RJ XQJHV SHUVRQOLJH XWYLNOLQJ RJ LGHQWLW
SROLWLNN n OHJJH WLO UHWWH IRU DW EDUQ RJ XQJH
NXQVWQHUH RJ NXOWXUIRUPLGOHUH RJ VHOY InU PXO
%/ ' 6DPPH VWH@ @VHUNSDUW KDWPXOLJKHW WL
PHG SURIHVMRQHOOH NXQVWQHUH RJ NXOWXUIRUPLGO
HYQHU RJ NRVWQDGHQH E;U KRDELV Sn HW ODYHVW PX

.XOWXUNRUWHW EOH LJDQJVDWW L VRP HQ SUjYHRU
'VWIROG , EOH \WWHUOLJHUH V\Y I\ONHU LQNOXGH
9HVW \$JGHU +RUGDODQG 0jUH RJ 5RPVGDO 6jU 7Uj
VWDWOLJH EHYLOJQLQJHU WLO SUjYHRUGQLQJHQ L
I\ONHVNRPPXQHGH 6DPPH VXP HU DYVDWW L 'HW
DGPLQLVWUHUHU XWIRUPHU RJ JMHQQRPIjUHU SUjYHRU

.XOWXU RJ NLUNHGHSDUWHPHQWHW ..' KDU JLWW 1RU
HQ HNVWHUQ HYDOXHULQJ DY SUjYHRUGQLQJHQ ,QWHU
,5,6 KDU JMHQQRPIjUW NDUWOHJJLQJ RJ HYDOXHULQJ
'HWWH DUEHLGHW OLJJHU WLO JUXQQ IRU KHUY UHQGH

)RUVWnHOVH DY RSSGUDJHW RJ GLVSRVLVMP
8WRYHU IRUPXOHULQJHQH QHYQW L LQQOHGQLQJHQ JD
IRU KYRUGDQ RUGQLQJHQ VNXOOH XWIRUPHV XWRYHU

PLQVW OLNH P\H UHVXUVHU VRP WLOVNXGGHW IUD GH
WRWDOH PLGOHQH VNXOOH Jn WLO DNWLYLWHW

'HW IRUHOLJJHU RJVn In NRQNUHWH EHVNULYHOVHU D
'HSDUWHPHQWHW KDU ODQJW Sn YHL RYHUODWW WLO K
HJQH PnO PHG RUGQLQJHQ RJ RJVn GHQV XWIRUPLQJ
PnOHQH HU DOWVn SRWHQVLHOW IRUVNMHOOLJH PHOOR
XWHQ YLGHUH JLWW KYD GHW YLO VL DW RUGQLQJHQ H
KYHUW HQNHOW I\ONH GHUIRU YXUGHUHV VSHVLILNW X
SULRULWHULQJHU

)RU n JL HQ VDPHOW YXUGHULQJ DY NXOWXUNRUWRUG
RSHUDVMRQDOLVHULQJ

6OLN YL IRUVWnU RUGQLQJHQ NDQ PnOHQH IRUVWnV W
NXOWXUWLOEXGHQXQJGRP (W DQQHW HYDQHSn YMUNH XQ
LQYLWDVMRQVEUHY WLO I\ONHVNRPPXQHQH RP n Y UI
'>I@RUPnOHW PHG NXOWXUNRUWHW HU n In XQJGRP WL
UHNUXWWHU Q\H SXEOLNXPDPDU .XOWXUNRUWHW VI
EUHGW VSHNWHU DY NXOWXUWLOEXGHQXQJGRP WHLHU VHJ RP
XQJGRP 'HWWH NDQ VLHV n Y UH UHODWLYW HQNHOW F
ELOOHWWHU KYLV NXOWXUNRUWHW JLU GHP JRGH UDED

SnYLUNH XQJGRP V NXOWXUYDQHU RJ GHW Sn WR Pn
VHJ DY NXOWXUWLOEXGHQH Vndo EHQ\WWH VHJ PHU D
VRP LNNH EHQ\WWHU WLOEXGHQH L GDJ DQGHUHQJHQ
Vndo VLNUHV PXOLJKHWHQ WLO'n .EHQ\WWH VPHQHW XQ
IRUPHOW NXOWXUWLOEXGHQH VLV r k DUHQHWHVGHVHQHW
DW HQ DY PnOVHWWLQJHQH PHG RUGQLQJHQ HU DW X
EHQ\WWH VHJ DY XOLNH NXOWXUWLOEXG XDYKHQJLJ
VWDWXV HWQLVN EDNJUXQQ ERVWHG P WLOXG %/'
NXOWXUWLOEXGHQJHUOLJ JHNLJHWHVHQ WUDOH HOHPHQWHU L Y
HYDOXHULQJ

.XOWXUEHJUHSW GYV KYD VRP IDOOHU LQQ XQGHU N
PDQ Vndo IRUVWn GHW L 'EUHG' RJ HOOHU 'VPDO' IR
'ILQNXOWXU' EOH LNNH GHILQHUW IUD GHSDUWHPHQ
I\ONHVNRPPXQHQH ODJW VHJ Sn XOLNH GHILQLVMRQHU
GHILQHUHV VRP 'NXOWXU' 6HOY RP GHW LNNH HU HQW
GHSDUWHPHQWHW PHG IRUPXOHULQJHQ 'n UHNUXWWHU
RP DW RUGQLQJHQ Vndo NXQQH ELGUD WLO DW XQJG
YDQOLJYL V EHQ\WWHU DW GH GHULJMHQQRP Vndo RS
SUDNVLV EHW\ PHU 'ILQNXOWXUHOOH XNVDUOH' 'HW
I\ONHVNRPPXQHQH WLO n GHILQHUH NXOWXUNRUWHW VC

'H VHQHUH WLnUHQH V UOLJ SHD VSHNWDLOXHW DW DEU G
VHOYVWHQGLJH NXOWXUSURGXVHQWHU VQDUHUH HQQ I
DQGUH VNDSHU IRU GHP >« @ VOn VWDJMDHQG RP WLDN XOWX
MI V 'H RYHQVWnHQGH IRUPXOHULQJHU IUD..' W\G

'>(@Q UHWWIHUGLJ IRUGHOLQJ DY NXOWXUJRGHU >«@' KDU OHQ

PHU L UHWQLQJ DY XQJGRP NRQVXP HQQ XQJGRP H
NXOWXU -HYQW RYHU KDU GH WL I\ONHQH RJVn IRNXVH
IRUKROG WLO NXOWXU VRP KDQGOHU RP NRQVXP 8QJ
SUDNVLVHU' LELG V\QHV L PLQGUH JUDG n KD
NXOWXUNRUWHW PHG XQQWHDNOBYWLH HONXVWHU\ONHQ
SXEOLNXPVDVSHNWHW HQQ Sn GHOWDNHU RJ DNWLYLV
PHVW RP NXOWXUNRUWHW RJ XQJGRP VRP SXEOLNXP

(YDOXHULQJVDUEHLGHW KDU KDWW WR KRYHGVLNWHPnO
RUGQLQJHQ PHG NXOWXUNRUW IRU XQJGRP KDU Y
I\ONHVNRPPXQHGH RJ KYRUGDQ GLVVH IXQJHUHU 2YHU
PHG NXOWXUNRUW LNNH IUHPVWnU VRP pQ RUGQLQJ
KYHUDQGUH ODQJV QRHQ GLPHQVMRQHU PHQ LQJHQ I\
RUGQLQJHQ \$YVWDQGHQ PHOORP \WWHUSXQNWHQH HU
IUHP RJ EHVNDQYIRQYRWWHU n RUJDQLVHUH HW NXOWXU

(W DQQHW VLNWHPnO HU n XQGHUV;NH KYLONHQ EHW\
NXOWXUWLOEXGHW WLO XQJGRP RJ GHUHV NXOWXUYDQ
9L VNDO RJVn GLVNXWHUH KYRUGDQ UHVXOWDWHU S
I\ONHVNRPPXQHGH KDU YDOJW 0HG UHVXOWDWHU VND
IRUPHOW NXOWXUWLOEXG WLO XQJGRP ;NW EUXN D
NXOWXUWLOEXG XQJGRP LNNH YDQOLJYLV EHQ\WWHU V
RJ EUXN

9L KDU IRUPXOHUW SUREOHPVWLOOLQJHU VRP I;OJHU

+YRUGDQ KDU GH IRUVNMHOOLJH I\ONHVNRPPXQHGH XW
NXOWXUNRUW IRU XQJGRP"

+YLONH XWIRUGULQJHU KDU GH UHVSHNWLYH I\ONHVNR
RJ HOOHU NXOWXUDUUDQJ;UHU WLO RUGQLQJHQ"

+YD EUXNHV NRUWHW EUXNW WLO" (U GHW 'K;\` HOOHU

+YLONHQ EHW\GQLQJ KDU I\ONHVNRPPXQHGHV IRUVNM
RUGQLQJHQ PHG NXOWXUNRUW IRU XQJGRP"

+YRUGDQ YXUGHUHU YLUNVRPKHWHQH VRP KDU Y UW PH

+YRUGDQ YXUGHUHU XQJGRP RUGQLQJHQ" +YD HU PRW
nUVDNHU WLO DW PDQ LNNH JM;U GHW" %UXNHU GH NRU

5DSSRUWHQ KDU I;OJHQGH RSSE\JJLQJ 9L JLU I;UVW C
NXOWXUNRUWHWV IRUDQNULQJ RJ EHJUXQQHOVH JL
RJ L NDS JMHQQRPNu YL NRUW KYRUGDQ I\ONHVNR
GHILQHUW L VWRUWLQJVPHOGLQJHU , NDS UHGHJM
HYDOXHULQJHQ E\JJHU Sn 9L EHVNULYHU GHUWHW
I\ONHVNRPPXQHGH KDU RUJDQLVHUW RJ XWIRUPHW VLC
GHUHV EHJUXQQHOVHU IRU n LQQI;UH NXOWXUNRUWHW

'HW HU LNNH GHUPHG VDJW DW NXOWXUNRUWRUGQLQJHQ HU HQ
KDU KDWW DNWLY GLDORJ PHG RUJDQHU VRP 8QJGRPPhQV)\ONHV
NXOWXUNRUWHW

KDU PjWW VDPW LQNOXGHUHU VWDWLVLWLN GHU GHW
DQDO\|VH DY LQYROYHUWH YLUNVRPKHWHUV V\QVXSQNW
YDOJW 5RJDODQG VRP FDVHI\ONH IRU PHU LQQJnHQGH
KYRUGDQ XQJGRP PHU L 5RJDODQG VHU Sn NXOWXUNRU
PDWHULDOH IRU I\ONHW , NDS JLU YL HQ VDPOHW
NXOWXUNRUWRUGQLQJHQ +HU VNLVVHUHU YL RJVn PXO

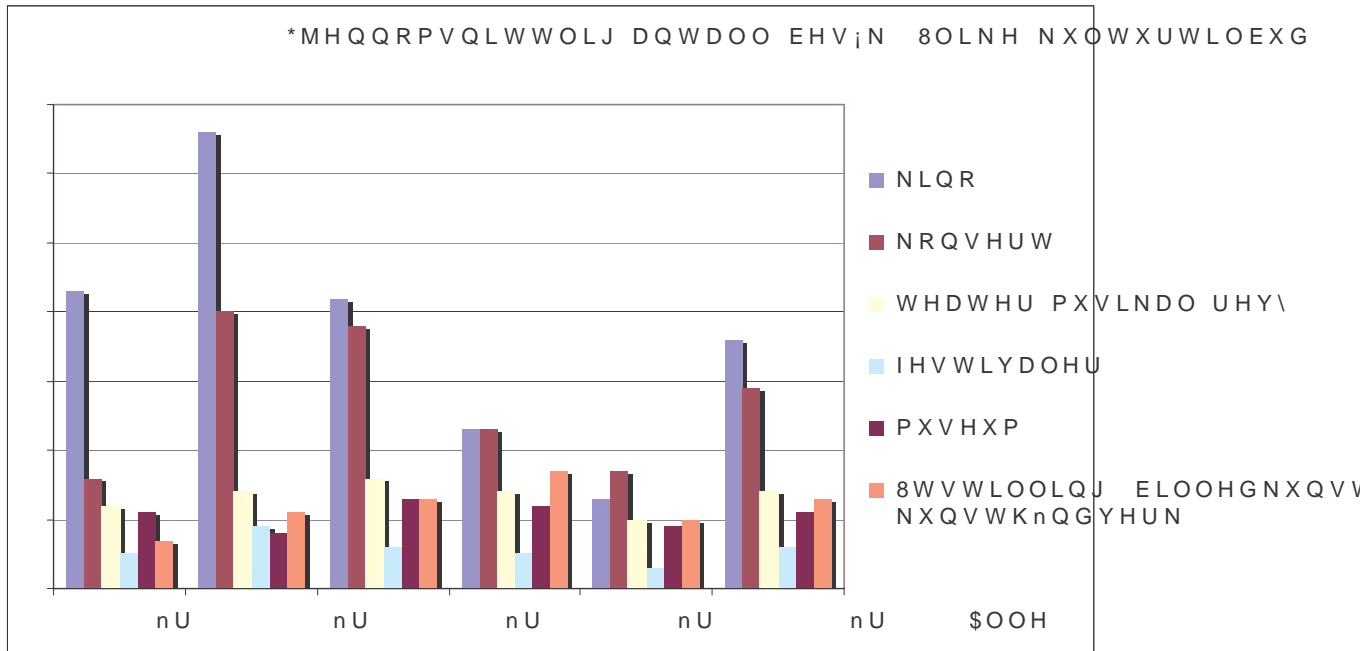
8QJGRP V NXOWXUYDQHU

6RP EDNWHSSH IRU DQDO\|VHQH L UDSSRUWHQ VNDO Y
PjQVWUH L XQJGRP V NXOWXUEUXN JHQHUHOW XDYKHQJ

*HQHUHOW KDU 'SRSXO UNXOWXUHQ' ODQJW Kj\HUH
'ILQNXOWXUHQ' 'HWWH PjQVWHUHW SUHJHU SODQOH
IRUVNMHOOLJH I\ONHQH RJ GHW SUHJHU KHOW NODUW

, XQGHUVjNHVHQ '8QJ L 1RUJH ' VRP EOH JMHQO
XQJGRP VVNROHQ RJ YLGHUJnHQGH VNRQH IUHPJnU G
Sn WHDWHU HOOHU UHY\ GHW VLVWH nUHW DY KDU
RJ XQGHU DY KDU Y UW Sn DUUDQJHPHQW IRU NODV
VHOY RP GLVVH WDOOHQH LQGLNHUHU DW UHODWLYW
JMjU GH LNNH PjQVWHUHW SUHJHU SODQOH
VLVWH nUHW Vn KDU GH IOHVWH Y UW NXQ HQ HOOHU W

7DOO1RUJN .XOWXUHWVDPVHMLHUN VHQWUOE\UnV 6WDWL
ELOGH YDULDVMRQ,HULJLXUNXOWXUHQHUNVDPHQOLNQH
DOGHUVJUXSSHUW EUXN DY NLQR WHDWHU PXVLNDU UH
'HWWH HU JMHQRPVQLWWOLJ DQWDOO EHVjN Sn XOLNH



)LJXU *MHQRPVQLWWOLJ DQWDOO EHVjN WLO XOLNH

'HUVRP YL NRQVHQWUHUHU RVV RP DOGHUVJUXSSHQ
PnOJUXSSHQH GHILQHUW DY GH IRUVNMHOOLJH I\ONH
NXOWXUYDQHQH HU GHVLGHUW PHVW RULHQWHUW PRV
LEHUHJQHW .LQR HU HQ KHOW GRPLQHUHQGH NXOWXU
PHU GRPLQHUHQGH HQQ L EHIRONQLQJHQ VHWX XQGHU
EUXN DY NRQVHUWHU PHQ L QRH PLQGUH JUDG HQQ EH
PXVHHU RJ NXQVWXWVWLOOLQJHU 1nU GHW JMHOGHU
RPWUHQW VRP JMHQQRVPVQLWVHW PHQV GHQ HU XQGH
NXQVWXWVWLOOLQJHU

8QJGRP RSSV;NHU VLVWQHYQWH VDPW WHDWHU UHY\
9LGHUH JnU XQJGRP Sn NRQVHUW JMHQQRVPVQLWVWOLJ
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)\ONHVNRPPXQHQV UROOH L NXOWXUSROLWL
XWYLNOLQJVDNW;U

, IRUOHQJHOVHQ DY YnU IRUVWnHOVH DY RSSGUDJHW
RP I\ONHVNRPPXQHQV UROOH L NXOWXUSROLWLNNHQ
IRUYDOWQLQJVQLYnHW

WDOOHW NXOWXUPHOGLQJHU WLOOD I\ONHVNRPPX
0DQJVHW 8WRYHU WDOOHW HGGUHW '>«@
VHJ IUDORVMDOH LYHUNRHWWLQWODJHQVWUOYSRLOGLNHN
DNW;UHU IRU HQ UHJLRQDOLVHELVG .QDWNKJEDQ VWXOUXJQ
VRP HWW DY I\ONHVNRPPXQHQV KRYHGRPUnGHU RP H
IRUVWDQG LELG

(W UHJLRQDOW IRNXV L I\ONHVNRPPXQHQV UROOH L NX
GH VHQHUH WLnUHQH)\ONHVNRPPXQHQV KDU L VHQHUH
VRBHJLRQDO XWYLNOLQJVDNW;U IRU ORNDOGH
UHJLRQDOW RJ.5ORNDOWLQJHJMHULQJHQ IRUVODJ WL
HGGUHG UROOH 5HJMHULQJHQ EHVNUlyHU L PHOGL
I\ONHVNRPPXQHQH L PLQGUH JUDG LQQHKDU HQ P\QGLJ
XWYLNOLQJVDNW;U IUHPKHVHV I\ONHVNRPPXQHQV URO
UHJLRQDOSROLWLVNH SUREOHPVWLOOLQJHU 0nOHW YI
XWYLNOLQJ VRP VNDSHU HQ KHOKHWOLJ RJ ;QVNHV VD
SHUVSHNWLYHU V\QHV RJVn n RPIDWWH. XOXOXMSURLOWLNL
IUDP PRW..' YLVHV GHW QHWWRSS WLO GHQQH I
I\ONHVNRPPXQHQV RJ YL OHVHU DW I\ONHVNRPPXQHQV
XWYLNOLQJVDNW;U' VRP Pn DQWDV RJVn n JMHOGH NXC

, VLVWQHYQWH VWRUWLQJVPHOGLQJ QHYQH V GHW YLGI
ODJW VWRU YHNW Sn IRUPLGOLQJ DY XOLNH IRUPHU IRU
ERUQ RJ XQJH 'HWWH KDU zJ NRPH WLO XWWU\NN L G
LELG %ODQW VHQUWDOH HOHPHQWHU L VOLNW I\O
RJ XQJH ± VRP NDQ VHHV VRP UHJLRQDOSROLWLVNH

'LVVH YDU WLGOLJHUH KHOVH RJ VRVLO V\NHKXV XQGHUYLV
KHOVHUHIRUPHQ HU V\NHKXVHQH LNNH OHQJHU I\ONHVNRPPXQHQH

NXOWXUP GHVWNLXOWXUHOVDPWNVLOVHXGNHQLO EDUQ RJ
NXOWXULQVWLWVMRQHQH VRXOMXWNRHMDYGVQLQVHQR
GHQQH VDPHQKHQJ I\ONHVNRPPXQDO NXOWXUSROLWL
OHGG L UHJLRQDO XWYLNOLQJ

6OLNH NXOWXUSROLWLVNH WLOWDN PRW EDUQ RJ XQJH
KDU IRUVNMHOOLJH PnOVHWWLQJHU RJ XOLN XV
NXOWXUSURGXNVMRQ MI 9DDJODQG HW DO Pn VLI
.XOWXUP;QVWULQJ GUHLHU EnGH GHQ NXOWXUHOOH V
SXEOLNXPVDVSHNWHQH /LNHYHO HU GHQ NXOWXUHOH
IRUVNMHOOLJH RUGQLQJHU +HOW NRUW NDQ PDQ VL
EULQJHV W\XOWXUHQD VNROHQ .XOWXUNRUWHW HU VQ
XQJGRPHVLYO n RSSOVNHUHQ 'HUWLO HU UDPHQH IRU
IRUVNMHOOLJH , ;NRQRPLVN IRUVWDQG HU NXOWXU
VDPHQQLNQHW PHG GHQ NXOWXUHOOH VNROHVHNNH
VNROHVHNNHQ XWJMRUGH PLOOLRQHU L 0LGHC
WLO PLOOLRQHU IUD..' RJ I\ONHVNRPPXQHQH VDPOHV

'DWDPDWHULDOH

5DSSRUWHQ HU EDVHUW Sn I;OJHQGH GDWDNLOGHU
WLOJMHQJHOLJ VWDWLVLNN IRNXVJUXSSHU VDPW HC
IRU LQWHUVMXJXLGHU RJ VS;UVPnOVVNMHPD

\$OOH DQVYDUOLJH IRU NXOWXUNRUWRUGQLQJHQ L GH
WHOHIRQ HWWHU VWUXNWXUHUWH LQWHUVMXJXLGHU
I\OGLJH QRWDWHU EOH JMRUW XQGHUYHLV ,QWHUVMXH

'HUQHVV KDU YL JMHQQRPI;UW GRNXPHQWDQDO\VHU JM
WLO..' HU OHVV RSS PRW RYHQQHYQWH LQWHUVMXHU

9L KDU JMHQQRPI;UW HQ PLQGUH ZHE XQGHUV;nHOVH
DQVYDUOLJH L I\ONHVNRPPXQHQH RP n QRPLQHUH RSS
NXOWXUNRUWRUGQLQJHQ RJ ED RP VSUHGQLQJ LIW
PXVHXP LGUHWV IHVWLYDO NRQVHUW NLQR (SRVW
NYDOLWDWLYH VS;UVPnO EOH VHQGW XW WLO YLUN
VDPHQQ DUUDQJ;UHU I\OWH XW VNMHPDHW %ODQW G
NXOWXUKXV IRWEDOONOXEEHU IHVWLYDOHU NRQVHU
UHSUHVHQWHUW PHQ LNNH PHG DOOH IRUVNMHOOLJH W

9L KDU YLGHUH JMRUW WR IRNXVJUXSSHU EODQW XQJG
EHJJH GLVVH JMHQQRPI;UW L 5RJDODQG HQ Sn HQ
VDPIXQQVIDJOLQMH RJ HQ Sn HQ YLGHUHJnHQGH VNR
HOHNWUROLQMH KHOVHIDJ L 5\I\ONH (OHYHU HU UH
IRNXVJUXSSHQH YDU GHV EnGH EUXNHUH RJ LNNH EUXN
IOHUWDOO DY VLVWQHYQWH %HJJH IRNXVJUXSSHQ
JUXSSHLQWHUVMXHQH YDUWH FD PLQXWWHU 6DPWD

)RU GHV IRUPnO n VWXGHUH HIIHNWHU RJ UHVXOWDWH
PDQJHOIXOO RJ PHU PDQJHOIXOO HQQ YL DQWRN GD Y
VN\OGHV GHWWH DW GH WL I\ONHQH KDU Vn IRUVNM
I\ONHVNRPPXQH RJ NXOWXUDUUDQJ;UHU DW VWDWLVLNL
EHJUHQVHW JUDG KDU ODWW VHJ JM;UH)HNV HU GH
HJHQHJLVWUHULQJ IUDK NQDORPHQH VDO YRVRKYRU PD

VNDIIHW VHJ NRUWHW KYD GHW EUXNHV WLO RJ KYRU
I\ONHQH VRP KDU WDOOJUXQQODJ LNNH KDU SURGXVHU
NRUWHW 7DOOPDWHULDOHW YL EDVHUUH RVV Sn VWD
RYHQQHYQWH LQWHUVMXHU RJ IUD I\ONHVNRPVPHQIHDQHW
GHUIRU DQYHQGW SUDJPDWLVN RJ VRP XQGHUVWjWWH
ZHE XQGHUVjNHVH RJ IRNXVJUXSSHU 9L KDU L QRHQ
IUD 66% 6WDWLVWVNNXDWXHQHWRIRPHWWH YL KDU EHV
PDWHULDOHENNDWVNRVWHLV HU 5RJDODQG 9L JMjU G
FDVHDQDO\VH DY GHWWH I\ONHW MI NDS (Q FDVHD
DY GHQ JUXQQ DW 5RJDODQG HU HW DY GH I\ONHQH GH
'HWWH JLU GHVVXWHQ PXOLJKHW WLO n OHVH WDOOPD
GH NRP WLO XWWU\NN L IRNXVJUXSSHVDPWDOHQH

,QWHUQDWLRQDO 5HVHDUFK ZZZZLWXXVHR RI 6WDYDQJHU \$6

)\ONHQHV XWIRUPLQJ DY RJ HUIDULQJH
NXOWXUNRUWRUGQLQJHQ

, GHQQH GHOHQ DY UDSSRUWHQ JLU YL HQ RYHUVLNW R
XQJGRP KDU Y UW XWIRUPHW L GH UHVSHNWLYH I\ONH
EXGVMHWWOHWLWNRPPXQH ..' GLVWULEXVMRQVRUGQLQJH
RUGQLQJ PnOJUXSSH SULV Sn NRUWHW UDEDWWHU RJ
KYHUW I\ONH LQQHKROGHU GHUWLO EHWUDNWQLQJHU R
XQJGRP EUXN DY NXOWXUWLOEXG KYLONH XWIRUGULC
PHG n Qn XQJGRP PHG RUGQLQJHQ KYRUYLGW PDQ O\N
RUGQLQJHQ KDU KDWW VLWW YLNWLJVWH QHGVODJV
NXOWXUIRUPHU VRP KDU GRPLQHUW XQJGRP EUXN DY I

6RP QHYQW KDU NDUWOHJLQJHQ YnU DYGHNNHW VY UV
IRU XQJGRP Sn)RU JMHQQRPDQJHQ KDU YL JUXSSHUW
HOOHU IOHUH LQGLNDWRUHU OLJQHU KYHUDQGUAH)\ON
\$XVW \$JGHU RJ 0jUH RJ 5RPVGDO KDU EHJJH YDOJW NR
%XVNHUXG OLJQHU KYHUDQGUAH ODQJV GH IOHVWH LQG
I\VLVN UHIXVMRQVRUGQLQJ PDNV NU ELOOHWWHQ
EHVNMHGHA LQQVDWV IUD I\ONHW ± KHU UDSSRUWHUHV
VHQHUH KDU VQXGG WLO RSWLPLVPH +RUGDODQG
I\ONHW RJ HW VPDOW NXOWXUEHJUHS WLO JUXQQ 'HUC
RJ HW VY UW EUHGW NXOWXUEHJUHS RJ 'VWIROG PH
I\ONHQH , 1RUG RJ 6jU 7UjQGHODJ IRUHJnU VDOJ
HOHYHU

)RU n JL HW ELOGH DY GHQ VWRUH YDULDVMRQHQ L KY
NXOWXUNRUWHW LQNOXGHUHU YL HQ GHWDOMHUW WD
OjVQLQJHU 'HQQH NDQ EUXNHV VRP UHIHUDQVH IRU
IDUJHNRGHU VRP VDPVYDUHU PHG JUXSSHULQJHQ RYHU

, QRHQ I\ONHU RSHUHUHU PDQ PHG EXGVMHWW LQNOXVLYH OjQQ
VDPHQQLNQLQJVJUXQQODJ HU WDOO IRU GH VRP KDU RSSJLWW W
DQVOnWWH OjQQVXWJLIWHU 9L KDU WDWXWJDQJVSXQNW L DW P
OjQQ DUEHLGVJLYHUDYJLIW P P

7DEHOO 2YHUVLNW RYHU XWIRUPLQJ DY NXOWXUNRUWRUG

	0nOJUXSSHW DOGHUOjVQLOJ	3ULV 'LVVPOGEXVMEB	5HIXVMRQ HO cUVYH "XGG"	%UHGWH VPDOW% XGVMHWW	%XGVM SHUV L PnO	SHU L PnO
\$867 \$*(5	NRUWOjVW	1HL	SUjYHU LNNH E) DYWDOH XPPHU	%(**(
0'5(2* 5206	NRUWOjVW	1HL				
52*\$/\$1'	)\VLVN	.MjSHU QHWW EDQN	Sn KHQWHU L PDNV	NU \$HI SHU ELOO	%(**(
%86.(58'	)\VLVN	.MjSHU QHWW)\VLVN	Sn KHQWHU L PDNV	NU HUNHQ HOOHU WUDCVSRUW	%5('7	
9(67 \$*(5	)\VLVN	%HVVLOOHV QHWW SRVW	Sn VHQGHV L VHOY	NU HUNHQ HOOHU WUDCVSRUW	%(**(
+25'\$/\$1'	)\VLVN	UHHU UHJLVWUHL	GHOHU ! *6	.XQ WLOVNXGG	60\$/7	
125'/\$1'	)\VLVN	%HVVLOOHV QHWW SRVW	Sn VHQGHV L !	9HUNHQ HOOHU WUDCVSRUW	%5('7	
'67)2/'	)\VLVN	%HVVLOOHV QHWW SRVW	Sn VHQGHV L IUDYJ	)DVWH VXPPHU	%5('7	
125' 75'1'(/\$*	)\VLVN	(OHYHU WLO HOHYHU	VHQJHU HOHYHU	9HUNHQ HOOHU	%5('7	
6'5 75'1'(/\$*	)\VLVN	(OHYHU WLO HOHYHU	VHQJHU HOHYHU	YHUNHQ HOOHU U NM:SHU IRUHVW	%(**(

.RUWO;V RUGQLQJ IDVWH nUOLJH WLOVNXG
5RPVGDO

\$XVW \$JGHU

\$XVW \$JGHU I\ONHVNRPPXQH KDGGH VLQ RIILVLHOOH OD
'HQ UHOOH RSSVWDUWHQ YDU L PDUV VDPFH nU GD
)\ONHW KDU HW nUOLJ EXGVMHWW IRU RUGQLQJHQ Sn
WLOVYDUHU NU SHU SHUVRQ L PnOJUXSSHQ \$Y GHW
PHG , YDU nUVYHUN DYVDWW WLO DUEHL
nUVYHUN L

.XOWXUNRUWHW EOH LQQI;UW L IRUOHQJHOVHQ DY I\ON
.RRUGLQDWRU L I\ONHVNRPPXQH RSSJLU DW PRWLYHU
XQJGRP ELOOLJHUH ELOOHWWHU WLO HW EUHGW VSHNW

0nOJUXSSHQ L \$XVW \$JGHU HU XQJH L DOGHUHQ ± n
2UGQLQJHQ HU NRUWO;V DOGHUVOHJLWLPDVMRQ IXQJH
HU P D R HQ JHQHUHO DOGHUVEDDWW RJ HW ODYWH
;QVNHQ HQ NRUWO;V RUGQLQJ IRU DW RUGQLQJHQ V
RUGQLQJHQ HU NRUWO;V KDU \$XVW \$JGHU LNNH QRHQ
VSHVLILNNH RUGQLQJHU IRU GHWWH \$Y VDPFH JUXQQ
)\ONHVNRPPXQH RYHUI;UHU IDVWH nUOLJH EHO;S WLO
LQJHQ IDVWH DYWDOHU PHG DUUDQJ;U RP UDEDWW Sn E

2UGQLQJHQ HU PDUNHGVI;UW JMHQRP GLJLWDO EXVV
EHV;N Sn YLGHUHJnHQGH VNROHU RJ)DFHERRN , W
DUUDQJ;UHQH VNDO PDUNHGVI;UH NXOWXUNRUWHW JMH

ODQ IRNXVHUHU NXQ Sn SXEOLNXPVDVSHNWHW L \$XVW \$
DY EnGH 'VPDO' RJ 'EUHG' NXOWXU 'HW YDU DUUDQ
VSHQQHU IUD GLYHUVH PXVHU WHDWHU NRUWILOPIHV

.RRUGLQDWRU RSSJLU DW GH WISHQH NXOWXUDUUDQJH
NRUWHW HU NLQR IHVWLYDOHU PHG XQJ SURILO RJ
RYHUVLNWHQ L UDSSRUWHQ WLO ..' DW WHDWUH PXV
JMHQRPJnHQGH RSSJLU OLWHQ EUXN HOOHU LQJHQ VR

.RUWHW EUXNHV GHVLGHUW PHVW L E\HU \$QVYDUOLJ
YHOGLJ JRGW 'HWWH KDQGOHU L VWRU JUDG RP KYD
VWHGHQH L I\ONHW 'HW KDU Y UW YDQVNHOIJ n ILQQH
WHWWVWHGHQH

\$Y XWIRUGULQJHU I\ONHVNRPPXQH KDU KDWW IUHPJ
RUGQLQJHQ NMHQW EODQW XQJGRP 0nOJUXSSHQ HU Y
GHW ILQQHV GHVVXWHQ In DNWXHOOH DUUDQJHPHQWH
'HW n UHNUXWWHUH DUUDQJ;UHU WLO RUGQLQJHQ KDU

7LGVDVSHNWHW HU DQWDNHOLJ YLNWLJ L GHQQH VDPPI
RJ RUGQLQJHQ WDU nS,HRQDGHU WDIQGHUHWONBHUHPJnU
VHOY WDU NRQWDNW PHG I\ONHVNRPXQHQ PHG jQVNH
NDQ VLHV n Y UH HW PnO Sn KYRU NMHQW RJ DWWUDN
'HWWH HU LNNH WLOIHOOHW L \$XVW \$JGHU KYRU GHW
DYWDOHQ

'D \$XVW \$JGHU KDU HQ NRUWOjV RUGQLQJ VNLOOHV GH
)jOJHOLJ ILQQHV GHW LQJHQ VWDWLVLWLN RYHU KYRU
WLO..'RSSJLV GHW DW EOH VROJW ELOOHWWHU JM
O\V DY DW PnOJUXSSHQ EHVWnU DY SHUVRQHU Pn
ELOOHWWHU SHU SHUVRQ ,IW DQWDOO VROJW ELOOH
UHIXVMRQVVXP RJVn VRP UHODWLYW NRWEDU L \$XVW S
L WLOVNXGG WLO DUUDQJjUHQH 6HOY RP YLUNVRPKHV
WLOVNXGGGHQ UHSUHVHQWHUHU GHWWH HQ Kj\ VXF
)\ONHVNRPXQHQ KDU RJVn YDOJW n Jn ERUW IUD GH
DYWDOHU PHG UHIXVMRQ SHU VROJWH ELOOHWW

/LNHYHO VHOY RP DUUDQJjUHU PHG 'VPDOHUH' NXOWX
Vn YLVHU ELOOHWWVWDWLVLWLN IRU NLQRHU I HN
NXOWXUNRUWELOOHWWHU JMHQQRP SHULRGHQ NRUHHW

3n VSjUVPnO RP PDQ RSSOHYHU DW PDQ O\NNHV L n Qn
GHW Qn HU HQ jNHQGH LQWHUHVH IRU RJ EHYLVVWKH
RUGQLQJ GHW WDU WLG n HWDEOHUH 'HW V\QHV OLNHY

0jUH RJ 5RPVGDO

, 0jUH RJ 5RPVGDO VWDUWHW NXOWXUNRUWRUGQLQJHQ
LNNH IXOO RYHUVLNW RYHU EXGVMHWW IRU (W OjV
NU LQNOXVLYH'HWVWVWLVWVWUHU NU SHU SHUVRQ
GULYHV PHG nUVYHUN

%HJUXQQHOVHU VRP RSSJLV IRU n LQQIjUH NXOWXUNR
EUXN DY NXOWXUWLOEXG RJVn IRU DQGUH NXOWXURSS

0nOJUXSSHQ HU GHILQHUV WLO ± nU VRP XWJMjU
2UGQLQJHQ HU JUDWLJ RJ NRUWOjV OHJLWLPDVMRQ I
NRUWOjV RUGQLQJ YDU n VHQNHWUVNHQH IRU X
DGPLQLVWUDVMRQ (Q NRUWOjV RUGQLQJ JLU LQJHQ RI
RJ GLVWULEXVMRQ RJ LIjOJH NRRUGLQDWRU JMjU HQ V
EUXNH GHW OHVWHSUWHQ DY UHVXUVHGH JnU GHVVX
InU UDEDWW Sn GH NLQRHU RJ NXOWXULQVWLWXVMR
PHG 'HW HU RJVn HNVWUDVDWVQLQJ Sn VWRUH IHVWL

'HWWH V\QVSXQNWHW IUHPPHV L Vn n VL VDPWOLJH LQWHUYMXHU
9ROXPHW HU LPLGOHUWLG LNNH VWRUW , SHULRGHQ IHEUXDU±D
\$UHGGDO NLQR

7RWDOW IRU RJ KDU I\ONHW PRWDDWW PLOOLRQ NU IUD
RJ L WLOOHJJ PHG OjQQ

NXOWXUDUUDQJ;UHU HU GHOYLV UHIXVMRQ IRU PHOORP
ELOOHWW

.XOWXUEHJUHSW IDYQHU EnGH GHQ EUHGH RJ GHQ VP
I\ONHW KDU LQQJnWW DYWDOHU PHG ILQQHU PDQ GH V
E\HQH 0ROGHMD]] -XJHQGIHVW RJ -XJHQGVWLOKXVHW

\$OOH HOHYHU L YLGHUHJnHQGH VNROH KDU 3& IUD I\O
PDUNHGV;ULQJ DY RUGQLQJHQ 'LVVH 3&HQH KDU VDP
DOOH UDEDWWHU RJ DUUDQJ;UHU NXOWXUNRUWHW JLU

)\ONHVNRPPXQHQ PHUNHU WHQGHQVHQ WLO DW DUUDQJ
GHP IRU n Y UH PHG L RUGQLQJHQ .RRUGLQDWRU IRUW
KYD JMHOGHU IRUKROGHW PHOORP XQJGRP V LQWHUHV
WLOEXG L NRUWHW

6RP DQGUH I\ONHU EUXNHV NXOWXUNRUWUDEDWWHQ G
5RPVGDO KHQJHU GHWWH LPLGOHUWLG RJVn VDPHQ
YLGHUHJnHQGH VNROH DW GHW GHUIRU HU L GH WHV
EHILQQHU VHJ 'HW HU GHVVXWHQ ODQJW I UUH UHOHYD

, EHWDOHW I\ONHVNRPPXQHQ XW FD NU L UH
KDU ;NW NRQLXHUOLJ VLGHQ RUGQLQJHQ EOH LQQ
UHIXVMRQVXWEHWDOHQJHQ PDUNDQW 'HWWH VN\OGW
VHJ RJVn JMHOGHQGH YHG NLQRHQH 7RWDOW EOH
NXOWXUNRUWRUGQLQJHQ 'LVVH WDOOHQH NDQ VDPHQ
KDU HQ RUGQLQJ VRP WLO GHV PLQQHU RP 0;UH RJ 5P
0;UH RJ 5RPVGDO KDU RUGQLQJ PHG UHIXVMRQ SHU EL
\$XVW \$JGHU ELOOHWWHU SHU SRWHQVLHOO EUXNH
NU UHIXVMRQ SHU ELOOHWW 0;UH RJ 5RPVGDO N

(Q DY I\ONHWV PnOVHWWLQJHU PHG NXOWXUNRUWRUGQ
NXOWXUWLOEXG GH HOOHUV LNNH EHQ\WWHU VHJ DY 6
JUDG \$Y ELOOHWWHU VROJW HU RYHU WLO NLQR
%LOOHWWHU WLO WHDWHU VFHQHNXQVW UHSUHVHQW
IOHVWH I\ONHQH KDU NXOWXUNRUWHW DOWVn L OLWHQ
VPDOHUH NXOWXUIRUPHU 'HWWH XQGHUVWUHNHV RJVn
VLHU DW GHW HU YDQVNHOLJ n UHNUXWWHUH XQJGRP V
OLWH EHV;n KRV WLOE\GHUH DY NODVVLVN PXVLNN

)\ONHVNRPPXQHQ VNULYHU L VLQ UDSSRUW DW XQJG
YDULHUHQGH 'HWWH IUHPNRPPHU RJVn L LQWHUYMX P
VW;UVWH SUREOHPHW L DUEHLGHW PHG NXOWXUNRUW
RUGQLQJHQ .RRUGLQDWRU YHNWOHJJHU RJVn DW GHW
JM;UH HQ HJHQLQQVDWV I HNV YHG n EHYLVVWJM;UH
(OOHUV SRHQJWHUHU NRRUGLQDWRU DW RUGQLQJHQ EX
ODQVHUW I HNV JMHQQRP GLVNGHVMRQRPHLQVWVWVWVWV
NDVWHW XWL GHW

.RUWHW KHQWHV I\VLVN NU ELOOHWWHQ
5RJDODQG RJ %XVNHUXG

5RJDODQG

5RJDODQG YDU HW DY WUH SLORWI\ONHU VRP EOH YDOJ
HQ SUjYHRUGQLQJ KjVWHQ

%HJUXQQHOVHU IRU n LQQiUH NXOWXUNRUWHW YDU
NXOWXUWLOEXG IRU XQJH 'HW HU RJVn HW PnO DW NRU
NXOWXURSSOHYHOVHU RJ RSSViNH Q\H DUHQDHU 6OL
'GDQQHOVHVSURVMHNW' L 5RJDODQG

2UGQLQJHQ 5RJDODQG I\ONHVNRPPXQH KDU YDOJW HU H
HU DY HQ KHOW DQQHQ VWjUUHOVHVRUGHQ , HU EX
LEHUHJQHW OjQQ P P 'HWWH HU GHW VWjUVWH EXGVI
..' PHG NU RJ I\ONHW PHG PLOOLRQHU SOXV
WLOVYDUHU NU SHU SHUVRQ L PnOJUXSSHQ 'HW H
NXOWXUNRUWHW

OnOJUXSSHQ L 5RJDODQG HU XQJGRP L DOGHUHQ ±
SHUVRQHU 0RGHOOHQ HU I\VLVN NRUW VRP NMjSHV KH
6SDUHEDQN 65 EDQN .RUWHW NDQ EHVWLOOHV Sn ,QV
HQ EDQNILOLDO IRU YLGHUH UHJLVWUHULQJ IRWRJUDIH
SRVW WLO NMjSHU .RUWHW NRVWHU NU IRU PnQH
NRVWHU PDNVLPXP NU XDYKHQJLJ DY RUGLQ U SU
PHOORPOHJJHW RSS WLO ELOOLJVWH ELOOHWW UHIXQG
WLO PDUNHGVIjULQJ

.XOWXUNRUWHW KDU Y UW EUHGW PDUNHGVIjUW JMH
NLQRUHNODPH)DFHERRN VDOJ Sn VNROHU VDPW PHGI
NU Sn PDUNHGVIjULQJ L

, VNULYHQGH VWXQG HU GHW WRWDOW DUUDQJjUHU
'LVVH GHNNHU EnGH 'EUHGHUH' RJ 'VPDO' NXOWXU RJ
VRP 5RFNIHVW RJ 0DLMDj] NLQRHQH WLO 9LNLQJ IRWED
NXOWXUEHJUHS WLO JUXQQ IRU DUEHLGHV VDPWLGLJ V
LQWHUHVH IRU Q\H RJ XYDQWH NXOWXURSSOHYHOVHU
In PHG DUUDQJjUHU IRU 5RJDODQG (WWHU KYHUW R
DUUDQJjUHU VHOY WDU NRQWDNW IRU n Y UH PHG L RU
SURVHV 'HW IRUWHOOHV DW GHW HU OHWWHUH n UHN

(Q UHODWLYW Kj\ DQGHO DY ELOOHWWHQH VROJW JMH
ILQNXOWXUHOOH NXOWXUIRUPHU 'HWWH HU LPLGOHUW
VRP KHQJHU VDPHQH PHG DW NLQRHU LNNH JLU NXOWXU

2JVn L 5RJDODQG EnGH DQVNDIIV RJ EUXNHV NRUWHW
RJ IUHPVW L 6WDYDQJHU RJ +DXJHVXQG 'HW KDU YLVW
WLO XQJGRP L ODQGNRPPXQH MI NDS IRNXVJUXS
HQ GHO DUEHLG KHU EO D JMHQQR n In PHG DNWXHO

\$Y DQGUH XWIRUGULQJHU QHYQHU I\ONHW n Qn XW WLO
RJVn KDWW YHVHQWOLJ WHNQLVN XWIRUGULQJHU P
DUUDQJjUHU WLO n WD L EUXN WHNQLVN OjVQLQJ IRU
KDU RJVn KDWW SUREOHPHU PHG VDOJ RJ GLVWULEXVM

I\VLVN RSSV;NH HQ DY 65 EDQNV ILOLDOHU IRU n In NR
XQJGRP 'HWWH UHSUHVHQWHUHU HW NODUW WLOJMHQ
DUUDQJ;UHU IUD 5RJDODQG L YnU ZHE XQGHUV;NHOVH
KDU RJVn Y UW HW SUREOHP DW 65 EDQN LNNH KDU IH
VLVWH YDU PDQ L HQ SHULRGH OLWW WLOEDNHKROGHQ
'QnU NRUHHW LNNH HU WLOJMHQJHOLJ GD' HUH PDQ IR
WHNQLVNH O;VQLQJHQH KDU L WLOOHJJ Y UW NRVWEDU
.RRUGLQDWRU L I\ONHW VLHU GH KDU GHOYLV O\NWHV
GHHWH YLVHU VHJ YDQVNHOLJHUH HQQ PDQ DQWRN Sn
YHOO\NNHW L 6WDYDQJHU RJ +DXJHVXQG RPU nGHQH P
5RJDODQG KDU KDWW NRQWLQXHUOLJ ;NQLQJ L DQWDO
\$QWDOO ELOOHWWHU VROJW LIW KHOH PnOJUXSSHQ H
YLVHU IRU ;YULJ WLO NDS GHU 5RJDODQG EUXNHV VF

%XVNHUXG

%XVNHUXG VWDUHHW RUGQLQJHQ L MDQXDU 'HW E
Y UH VRP 5RJDODQGV 6RP L 5RJDODQG HU EXGVMHWWH
LQNOXVLYH O;QQ OnOW HWWHU DQWDOO SHUVRQU L
EXGVMHWWH DY GH WL I\ONHQH NU SHU SHUVRQ
\$UEHLGHW XW;UHV DY nUVYHUN IRUGHOW Sn SUR
%XVNHUXG I\ONHVNRPPXQH KDU L WLOOHJJ HQ NRRUGLO

%HJUXQQHOVHU IRU NXOWXURUGQLQJHQ L %XVNHUXG H
EUHGW NXOWXUWLOEXG RJ n VHQNH WHUVNHOHQ V
PnOJUXSSHQ ± nU YDU GHOYLV DW GHQQH IDOOHU P
PDQ LNNH EDUQHUEDDWW LNNH VWXGHQWUDEDWW RJ Y
GHQ NXOWXUHOOH VNROHVHNNHQ

OnOJUXSSHQ XWJM;U SRWHQVLHOOH EUXNHUH 2UC
NU SHU PQG .M;SHU UHJLVWUHUHU VHJ RJ EHVWLC
I\VLVN WLO EHVWHPW VWHG YLGHUHJnHQGH VNROHU
EDQNILOLDOHU +HU EHWDOHU PDQ RJ EOLU IRWRJUDI
3URVHVHGHQ NDQ WD RSS WLO QRHQ XNHU %LOOHWWHU
, WLOOHJJ JLU NRUHHW DGJDQJ WLO HQ GHO JUDWLY
HU UHIXVMRQ SHU NM;SWH ELOOHWW

2UGQLQJHQ HU PDUNHGVI;UW EUHGW JMHQQRP NLQ
YLGHUHJnHQGH VNROHU)DFHERRN RJ HOHYUnG VRI
DPEDVVDG;UHU' Sn VNROHU

2JVn L %XVNHUXG IRNXVHUHU PDQ NXQ Sn SXEOLNXPVG
KDU LQQJnWW DYWDOH PHG I\ONHVNRPPXQHQ ILQQHU P
'VPDOH' NXOWXUIRUPHU , EUXN HU GHW LPLGOHUWLG
NRRUGLQDWRU HU NLQRHQ 'JUXQQVWHLQH' L NXOWXU
HU 'G;UnSQHUHQ' IRU XQJGRP LQQ WLO DQGUH NXOWXU

.XOWXUNRUHHW HU RJVn L %XVNHUXG HW E\IHQRPHQ
\$QGUH VWHGHU HU DNWLYLWHWHQ PHU VHVRQJEDVHU
KDQGOHU P\H RP DW WLOEXGHW HU ODQJW VW;UUH L E
KDU ODQJW PLQGUH LJMHQ IRU NRUHHW XWHQIRU E\HQ
NRRUGLQDWRUHU RJVn L DQGUH I\ONHU RJ RJVn L IRNX

\$Y XWIRUGULQJHU %XVNHUXG KDU KDWW L DUEHLGHW P
PDQJOHQGH WLOJMHQJHOLJKHW DY NRUWWH 6RP L 5RJ
DQVNDIIH VHJ NRUWWH Pn I\VLVN Jn WLO HW EHVWHPW
EDUULHUH IRU XQJGRP RJ DQVYDUOLJ L I\ONHVNRPXQ
IUD PnOJUXSSHQ Sn GHQQH DQVNDIIHOVHVPnWHQ \$Y G
WLO' OHGGHW RJ YLO EDVHUH VHJ PHU Sn QHWWEDVHU
HQ SRVLWLY XWYLNOLQJ QnU GHW JMHOGHU GHW n UHN
GLUHNWH WLO DUUDQJjUHU RJ GULYH DNWLYW LQQVDOJ
VHOY VRP WDU NRQWDNW PHG I\ONHVNRPXQH QIRU n
GLPHQVMRQH QHU RUGQLQJHQ VHOYJnHQGH L %XVNHUX

)RUHOLJJHQGH VWDWLVLWLN IRU %XVNHUXG EHJUHQVH
HU GHW EUXNHUH VRP XWJMjU QRH RYHU DY
XWYLNOLQJHQ RYHU WLG PHQ DQWDOOHU HU HQ jN
9L KDU LNNH WDOO IRU E\ ODQG PHQ GHW V\
GHVLGHUW Kj\HUH L E\HQH RJ Kj\HVW L 'UDPPHQ)\
UHIXVMRQHU IRU

6RP L \$XVW \$JGHU IUHPKHYHV GHW DW GHW HU VWLJH
GHWWH HU HW ODQJVLNWLJ DUEHLG

%HVNMHGHQ LQQVDWV)UD UHVLJQDVMRQ R
RSWLPLVPH 9HVW \$JGHU

9HVW \$JGHU UHSUHVHQWHUHU HQ LQWHUHVVDQW FDVH
UHVLJQDVMRQ WLO RSWLPLVPH

9HVW \$JGHU ODQVHUWH NXOWXUNRUWWH KjVWHQ 1
DQVOnV WLO NU L nUHW , UHQH PLGOHU ELGUDU
GHW VDPH %XGVMHWWHW XWJMjU NU SHU SHUVR
EHVNMHGHQ \$QVYDUOLJ L I\ONHVNRPXQH MREEHU
WLOVYDUHQGH FD nUVYHUN 2UGQLQJHQ KDU V
I\ONHVDGPLQLVWUDVMRQH KDU Y UW PHU VNHSWLNV V
HQ L XWJDQJVSXQNWHW HQNHQ RUGQLQJ VRP PDQ LNNI

%HJUXQQHOVHU IRU n LQQIjUH NXOWXUNRUWWH YDU
NXOWXUWLOEXG RJ n VHQNHWUHVNHQHQ IRU XQJGRP I

OnOJUXSSHQ HU XQJGRP L DOGHUHQ ± nU VRP XWJM
HU JUDWLW PHQ PDQ Pn UHJLVWUHUH VHJ IRU n In C
NXOWXUNRUWWHV KMHPHVLGHU HOOHU L ELOOHWWC
VDPDUEHLGVDYWDOH PHG , YDU UDEDWWRUGQLQJH
NRVWHW PDNV NU 1n EHVWHPPHU DUUDQJjUHQH ELO
NU L UDEDWW 5HIXVMRQVXWEHWDOLQJHU VNMHU SHU
IRU PHOORPOHJJHW PHOORP DYWDOW ELOOHWWSULV RJ

\$UUDQJjUHU VRP HU PHG L RUGQLQJHQ VSHQQHU IUD
RSHUD PXVHHU IHVWVSLOO IHVWLYDOHU WLO NLQR
IRNXVHUHV Sn SXEOLNXPVDVSHNWHW .LQRHQH KDU L
EHVNMHGQH EUXNHQ DY NRUWWH VRP KDU Y UW Vn
WHDWHUIRUHVWLOOLQJHU)UD IRUVRPPHUHQ KDU P
NXOWXUNRUWWH WLO IHVWLYDOHU

GHWWH IDVW PHQ RJVn NRRUGLQDWRUHU L DQGUH I\ON
GHW n In GHP WLO n JM;UH HQ HJHQLQQVDWV RJ LL Pn
NRUWHW SnYLUNHU KYHUDQGUH JMHQVLGLJ

0HQ 9HVW \$JGHU UHSUHVHQWHUHU DOWVn HQ LQWHUH
EHYHJHW VHJ IUD n YXUGHUH RUGQLQJHQ VRP OLWH Y
RSWLPLVPH .RRUGLQDWRU JD MXQL XWWU\NN IRU
OLWH V\QOLJ EOH EUXWW GD IHVWLYDOHQH NRP LQQ
VRP 4XDUW KDOY SULV I;UWH WLO JRGH PHGLHRSSVC
XQJGRP RJ IRU ;YULJH DUUDQJ;UHU 2J QnU GHW Qn HU
RJVn DUUDQJ;UHQH PHG HWW EOLWW ODQJW PHU
NXOWXUNRUWUDEDWWHQ LI;OJH NRRUGLQDWRU

/LWHQ LQQVDWV ± VPDOW NXOWXUEHJUHS +
+RUGDODQG VWDUWHW RUGQLQJHQ MDQXDU +RUGD
IRU NXOWXUNRUWHW HU PLQVW ..' ELGUDU PHG
EHO;S L WLOOHJJ WLO O;QQ 'HWWH JLU HW DQVODJV
WLOVYDUHU FD NU SHU SHUVRQ L PnOJUXSSHQ ORC
GULIWH RUGQLQJHQ PHG ODY LQQVDWV 'HW HU ODJW
+RYHGPNOVHWWLQJHQ HU WRGHOW L n JL XQJGRP EL
NXOWXUWLOEXG RJ Y UH HQ G;UnSQHU IRU NYDOLWHWV
PRW 'VPDOHUH' NXOWXUWLOEXG

0nOJUXSSHQ HU XQJGRP L DOGHUHQ ± nU HOHYHU L
SRWHQVLHOOH EUXNHUH .RUWHW VHQQGHV WLO V
HOHYHU VLJQHUHU IRU DW GH KDU PRWDDWW NRUWHW
PLQLXP UDEDWW KRV GH NXOWXULQVWLWXVMRQH
)HVWVSLOOHQH 'HQ 1DWLRQDOH 6FHQH P IO \$UUDQ
KRYHGVDN YLUNVRPKHWHU VRP HU VW;WWHW DY I\ONH
.XOWXUNRUWHW KDU L VWRU JUDG IXOJW I\ONHVNRP
9LUNVRPKHWHU PRWLYHUHV WLO n Y UH PHG L RUGQLC
'HWWH PHGI;UHU DW NXOWXUEHJUHSW L +RUGDODQG
I\ONHVNRPPXQHQH +RUGDODQG KDU RJVn EHYLVVW KRC
DY NRPPHUVLDOLVHULQJ)\ONHVNRPPXQHQ JLU LQJHQ
'HWWH VDPHQ PHG GHW IRUKROG DW NLQRHQ LNNH HU
DQWDNHOLJ DW NLQRHU KDU HQ UDEDWW Sn NXQ
SXEOLNXPVDVSHNWHW

.XOWXUNRUWHW HU LNNH V UOLJ DNWLYW PDUNHGVI;
NLQRUHNODPH L ILUH XNHU K;VWHQ

2JVn L +RUGDODQG HU NXOWXUNRUWHW E\VHQWUHUW
YHL KDQGOHU GHWWH RP I\ONHVNRPPXQHQV PDQJOHQG
VWHGHU

8WIRUGULQJHU VRP WUHNHNV IUHP HU DW GHW JHQH
YDQVNHOLJ n IRUPLGOH VPDO NXOWXU WLO XQJGRP .R
DUEHLGVNDSVLWHWHQ nUVYHUN HU HQ XWIRUGUL
RSS RJ IRUEHGUH GHQ

+RUGDODQG KDU LQJHQ VWDWLVLNN RYHU YHUNHQ
IUHPKHYHU 'HQ 1DWLRQDOH 6FHQH RJ %HUJHQ NXQV

NXOWXUNRUWXQJGRP EUXNHU PHVW 'HW ILQQHV VRP Q
LQQWU\NNHW YnUW RJVn IUD VYDUHQH WLO GH WUH K
ZHE XQGHUVjNHOVH HU DW NXOWXUNRUWHW HU OLWH L
3n VSjUVPnO RP RUGQLQJHQ HU YHOO\NNHW RUGQLQJ V
RSWLPDOW S W PHQ DW GHQ KDU HW YHVHQWOLJ SRV
VWjUUH 'D NXQQH PDQ VSHVLDOSOXNNHW DUUDQJHPHQ

6WRU LQQVDWV ± EUHGW NXOWXUEHJUHS 1I

1RUGODQG ODQVHUWH NXOWXUNRUWHW L IHEUXDU
%XGVMHWW IRU YDU PLOOLRQHU NU VRP WLOV
)\ONHVNRPPXQH VWR IRU PLOOLRQHU RJ..' IRU
UHGXVHUW WLO PLOOLRQHU NU L YDU G
NXOWXUNRUWHW 'HWWH HU KHYHW WLO FD nUVYHU

1RUGODQG HU GHW I\ONHW GHU XWIRUPLQJHQ DY NXOV
,QLWLDWLYHW WLO NRUWHW NRP IUD 8QJGRPPHQV)\O
W\GHOLJ XWJDQJVSXQNW L XQJGRP V HJQH jQVNHU RJ Y
EUHGHVWH NXOWXUEHJUHSW EODQW GH WL I\ONHQH
RUGQLQJHQ L WLOOHJJ WLO NLQR RJ WHDWHU P P)\O
WYHUV DY NRPPXQH RH VNLOOHW E\ ODQG HQQ GH
'>«@NDSH HW UHWIHWUGLJ NRUW VRP JLU OLNH PXOL
'UDSSRUW WLO..' , 1RUGODQG HU RJVn GHOWDNHUV
UDEDWW Sn LQVWUXPHQWHU RJ QRWHU L PXVLNNIRUHH
HUIDULQJHQH IUD %RGj NRPPXQH VRP DOOHUHG K
)\ONHVNRPPXQH LQQKHQWHW PHU HUIDULQJHU GHUI
SLORWI\ONHQH 5RJDODQG RJ 'VWIROG .XOWXUNRUWHV
DQQHQ NRQWHNVW RJ SROLWLVN WHQNQLQJ GD NXOWX
KMHPIO\WWLQJ JMHQQR L GHQWLWHWVNDLQJ WULY
IRU NXOWXUNRUWHW 0nOJUXSSHQ HU XQJGRP L DOG
SHUVRQHU .XOWXUNRUWHW HU HW JUDWL V I\VLV NR
WHOHIRQ RJ NRUWHW VHQQHV Vn KMHP L SRVW %HWL
PLQLXP UDEDWW WLO NXOWXUNRUWLQQHKDYHUH
HOOHU UHIXVMRQ PHQ EHWDOHU RIWH IRU WUDQVSRUV
JLU UHLVHUDEDWWHU %DNJUXQQHQ IRU n IRNXVHUH S
RJ jQVNHV RP n JL HW UHWIHWUGLJ WLOEXG Sn WYHUV

2UGQLQJHQ PDUNHGVIjUHV JMHQQR XOLNH NDQDOHU
KHQYHQGHVH WLO HOHYUnG XQJGRP VVNROHU RJ 9*
'DPEDVVDGjUHU' IRU NRUWHW VDPW DW PDQ JMHQQR
EUHY GLUHNWH WLO DOOH L PnOJUXSSHQ L I\ONHW .RP
VLVWH VRP HW V UOLJ YHOO\NNHW WUHNN GD EUHY
IRUHOGUH VRP YLO NXQQH KD jNRQRPLVN LQWHUHVH

8WIRUGULQJHU VRP QHYQH V L 1RUGODQG NQ\WWHU VH
NRPSHQVDVMRQ WLO NXOWXUDUUDQJjUHU NDQ GHW Y
RUGQLQJHQ VHOY RP PDQ KDU VHWV HQ jNQLQJ L DO
1RUGODQG KDU PDQ RJVn KDWW SUREOHPHU PHG n UHN
NRPPXQH L I\ONHW VRP JLV DQVYDU PHG n LQQJn ORND
n In PHG NRPPXQH 'HW QHYQH V RJVn DW PDQ LNNH
NXOWXUIRUPHU 2J WLO WURVV IRU DW PDQ KDU VDWV

PHOORP E\ RJ ODQG L NXOWXUEUXN Vn HU GHW RJVn L
PHG RUGQLQJHQ 6RP L DQGUH I\ONHU HU RUGQLQJHQ E
6LGHQ 1RUGODQG I\ONHVNRPPXQH LNNH RSHUHUHU PHG
LQJHQ VWDWLVLNN RJ OLWH NXQQVND S RP KYRU P\H N
EUXNHV WLO .RRUGLQDWRU KDU LQQWU\NN DY DW IHVW
DNWXHOOH I\ONHQH KDU 1RUGODQG GHQ NODUW K;\HV
VHJ NRUWHW , VNULYHQGH VWXQG HU GHW NXOWX
QRH VRP XWJM;U RYHU DY PnOJUXSSHQ \$QVYD
JRGW IRUQ;\G PHG GHWWH WDOOHW

%UHG PnOJUXSSH EUHGW NXOWXUEHJUHS ‘

‘VWIROG YDU GHW WUHGMH SLORWI\ONHW L NXOWXU
QRYHPEHU %XGVMHWWHW HU NU KYRUDY ..’
LQNOXVLY O;QQ P P %XGVMHWWHW WLOVYDUHU NU S
nUVYHUN WLO DUEHLGHW PHQ GHWWH YXUGHUHV Qn ;N
%HJUXQQHOVHU VRP QHYQH V IRU n LQQI;UH NXOWXUNR
EUHGHUH RJ VW;UUH EUXN DY NXQVW RJ NUXDVOHU PHGS
NRUWHW HU n In XQJGRP WLO n EHQ\WWH VHJ RIWHUH
SXEOLNXPPHUH

0nOJUXSSHQ HU VY UW EUHG L ‘VWIROG XQJGRP L DOG
SHUVRQHU .RUWHW NRVWHU NU IRU PnQHGHU PHC
HOHYHU L YLGHUHNHQGH VNROHU VH XQGHU /;VQLQJ
Qn NXQ IRU GH HOGVWH RJ GH \QJVWH HU NXOWXUN
UHJLVWUHUW VHJ Sn KMHPPHVLGHQ VHQQHV NRUWHW
I\VLVNH VDOJVVWHGHU \$OOH HOHYHU L YLGHUHNHQ
NXOWXUNRUWORJR VRP IXQJHUHU VRP NXOWXUNRUW
NRVWHU IUD NU RJ RSSRYHU \$YWDOHU PHG DUUDQ
UHIXVMRQVEHO;S RJ DQGUH KDU UHIXVMRQVDYWDOHU I
PHG UHIXVMRQ DQGUH KDU DYWDOHU

3JD OLWH VDOJ DY NRUWHW EOH GHW VDWVHW P\H S
JMHQQRP EO D NLQRUHNODPH IO\HUH DQQRQVHU
.XOWXUP;QVWULQJ RJ)DFHERRN)\ONHVNRPPXQH YXU
PnOJUXSSHQ nU VRP NDQ MREEH EO D PRW)DFHE
UXQG W NRUWHW 1nU GHW JMHOGHU PDUNHGVI;ULQJ D
JHQHUHOW XWLDJHQ DWVGHW PDUNHGVI;UH QRHM X LNNH
9HVW \$JGHU +HU RSSJLU NRRUGLQDWRU DW PDQ Qn HU
PDUNHGVI;ULQJ DY GHW RJ XQJGRP V LQWHUHVH IRU
UHIXVMRQ KDU GHW VWRUW VHW W Y UW OHWW n UHNUX
Y UW YDQVNHOLJ n In PHG WHDWUH

.XOWXUEHJUHS HW. XOWXUHQVW EUHG XQJGRP PHQ YDQNH
n Jn Sn ERZOLQJ L VWHGHW IRU n KHQJH SWDWLQVHU
%ODQW DUUDQJ;UHU ILQQHU YL EnGH 6WMHUQH Q +RFNH
NLQRHU EDGHODQG XQJGRP VKXV ERZOLQJ IHVWLYDO
HU OLNHYHO HW PnO n UHNUXWWHUH IOHUH SXEOLNXPP
IRUWHOOHV DW GHWWH HU YDQVNHOLJ (OOHUV IR
SXEOLNXPDVSHNWHQH

'HW IUHPKHYHV RJVn L 'VWIROG DW NXOWXUNRUWHW L D
HU OLWH VDOJ RJ EUXN DY NRUWHW L LQGUH 'VWIROG
WLOEXGHW HU

5HIXVMRQVXWEHWDOLQJHU ;NWH PDUNDQW IUD WLO
LNNH VHWW WDOO IRU DQWDOO ELOOHWWHU VROJW PH
6RP QHYQW EOH NRUWHW JMRUW JUDWLW IRU DOOH HO
*UXQQHQ WLO DW PDQ JMRUGH GHW YDU DW NRUWHW Y
NRUW , O;SHW DY GH WR I;UVWH nUHQH KDGGH PDQ
6DPPHQOLNQHWH PHG DQGUH I\ONHU HU GHWWH WDOOH
EUHGW GHILQHWH PnOJUXSSHQ (WWHU RPOHJLQJHQ
QRH VRP LQGLNHUHU DW GHW I;UVW RJ IUHPVW YDU XQ
NRUWHW WLGOLJHUH OnOJUXSSHQ NDQ GHUIRU KHYGHV
RJ I\ONHVNRPPXQH YXUGHUHU Qn RJVn n NXWWH XW
PnOJUXSSHQ KDGGH Y UW GHILQHWH VRP ± nU Pn G
NRUW WLO QRH RYHU DY GLVVH FD SHUVRQHU
NRUWHW KDU ;NW EHW\GHOLJ HWWHU DW NRUWHW EOH
ODQ HU GHUIRU JRGW IRUQ;G PHG RPOHJLQJHQ ODQ P
VRP HU HOHYHU L YLGHUJnHQGH VNROH PHQ LNNH GH

'HW QHYQH V RP HQ V UOLJ XWIRUGULQJ L DUEHLGHW
WLO GHQQH JUXSSHQ 6HOY RP PDQ VDWVHU P\H Sn
PDUNHGVI;ULQJ RSSOHYHU PDQ RIWH DW XQJGRP LNNH

(OHYHU VHOJHU NRUWHW WLO HOHYHU 7U;Q

1RUG 7U;QGHODJ

1RUG 7U;QGHODJ RJ 6;U 7U;QGHODJ VDPDUEHLGHU RP
'30 QWL' 1RUG 7U;QGHODJ YDU YDOJW XW VRP HW DY
NXOWXUNRUWHW EOH I;UVW UHHOW ODQVHUW L DXJXV
GHU ..' RJ I\ONHW ELGUDU PHG OLNH DQGHOHU 'HWWH
NU SHU SHUVRQ L PnOJUXSSHQ 'HW HU DYVDWW n

%HJUXQQHOVHU VRP RSSJLV IRU 1RUG 7U;QGHODJV LQ
;QVNHU n VWLPXOHUH WLO ;NW NXOWXUEUXN EODQW X
NXOWXUWLOEXG WLO XQJGRP XDYKHQJLJ DY ERVWHG
WHQNQLQJ XW WLO n OLJJH XQGHU LQQI;ULQJHQ KHU

OnOJUXSSHQ HU XQJGRP IUD WLO nU .RUWHW NRVV
PHQ GD GHW YLVWH VHJ DW In VNDIIHW VHJ NRUWHW E
EOH GDQQHW HWWHU ;QVNH IUD XQJGRPPHU L I\ONHW
VDPPH JUXSSHQ VRP ;QVNH HW NRUW VRP NRVWHW G
IRUEXQGHW PHG n KD NRUWHW 'H WR WU;QGHOD
GLVWULEXVMRQVRUGQLQJ VRP HU XQLN EODQW NXOWX
JUXQQVNROHQ RJ L NODVVH Sn 9*6 VRP VHOJHU NRU
HOHYHU' 6NROHNODVVHU PHOGHU VHJ WLO RUGQLQJH
VHOJHU NRUWHW WLO PHGHOHYHU .ODVVHQ EHKROGHU
NODVVHWXUHU RJ OLJQHGH .RUWHW NDQ RJVn NM;SHY
UDEDWW Sn ELOOHWWHU 'H YLNWLJVWH DNW;UHQH L
)\ONHW KDU P D R HW EUHGW NXOWXUEHJUHS 6PDOH
QHYQH YHUGLJ JUDG 'HW VN\OGHV IRU HQ VWRU GHO D

I\ONHW)\ONHW KDU YHUNHQ UHIXVMRQV HOOHU WLO
NDQDOHU IRU PDUNHGVI;ULQJ HU EHV;N Sn YLGHUHJnH
SUHVH

6HOY RP PDQ KDU KDWW DPELVMRQ RP n Qn XW WLO GLV
RP DW PDQ LNNH O\NNHV PHG GHWWH (QNR OJNLO DXWIRU
WLO n SnWD VHJ RSSJDYHQ PHG VDOJ 3 W VHOJHV NR
I\ONHW RJ DOOH GLVVH VNROHQH OLJJHU L E\HU RJ WH
I\ONHWV JHRJUDIL GD EUXNHUPDVVHQ HU VSUHGG J
LQVWLWXVMRQHU DUUDQJ;UHU L GLVWULNWHQH)\ONHV
GH PHVW IRONHULNH RPU;GHQH .RRUGLQDWHU IRUWD
RSSJLU NRRUGLQDWRU DW GHW RJVn WDU WLG n In PHG
WLO n JL UDEDWW Sn HJHW LQLWLDWLY 'HW HU RJVn P
VNROHNODVVHQH 'HW IRUWHOOHV RJVn DW GHW HU H
PnOJUXSSHQ

'D I\ONHW LNNH KDU UHIXVMRQHU KDU GH KHOOHU L
.RRUGLQDWRU VLHU DW KDQ LNNH KDU K;UW RP ;NW EH
LQQI;UW PHQ KDU UHJLVWUHUV HQ VWLJHQGH LQWHUH
SHUVRQHU , VNULYHQGH VWXQG HU GHW GLVWULEXHU
KDU KDWW RUGQLQJHQ L HW GU;\W KDOYnU NRRUGLQ
NXOWXUNRUWHW YLVHU VHJ n Y UH HW ODQJVLNWLJ DU
VLHV n Y UH HW ODYW WDOO 'HW HU KHOOHU LNNH JL
GHW DW NRUWHQH HU VHGGW XW WLO VNROHNODVVHQH
VROJW WLO PHGHOHYHU

6;U 7U;QGHODJ

6;U 7U;QGHODJ KDU DOWVn VDPFH RUGQLQJ VRP 1RUG
QRH WLGOLJHUH L 6;U 7U;QGHODJ HQQ L 1RUG 7U;QGH
PLOORQHU LQNOXGHUW O;QQ WLO nUVYHUN ..
I\ONHVNRPPXQH PHG NU %XGVMHWWHW WLOVYD

.RUWHWV XWIRUPLQJ RJ LQQKROG HU L VWRU JUDG ED
8QJGRPPHQV)\ONHVWLQJ OnOHV HU n IUHPPH NXOWX

'D RUGQLQJHQ L KRYHGWUHNN HU GHQ VDPFH VRP IRU
RUGQLQJHQ L GHWDOM KHU VH IRUULJH SXQNW 5DEDV
RJ YDULHUHU IUD UDEDWW WLO JUDWLVL LQQJDQJ O
NU IRU PnQHGHU IUHPIRU JUDWLVL NRUW HU KHU
VNDSh WLOK;ULJKHW RJ HLHUVNDS WLO NRUWHW .RRU
VHOJHV JMHQQRP 'HOHYHU VHOJHU WLO HOHYHU' NDQD
.RUWHW KDU L XWJDQJVSXQNW HW LQJHQ UHIXVMRQVRU
HQ GHO NLQRIRUHVWLOOLQJHU RJ IHVWLYDOSDVV

.XOWXUNRUWHW HU EUHGW PDUNHGVI;UW JMHQQRP NI
PHVVHU P P

.RUWHW KDU EUHGW QHGVODJVIHOW RJ JLU UDEDWW
IHVWLYDOHU DOSLPHQWIRU\$ n. QHYQH QRH

+HOOHU LNNH KHU ILQV GHW WLOJMHQJHOLJ VWDWLWV
I\ONHVNRPPXQH Q IRUWDOWH DW LQQWU\NNHW HU DW
5RVHQERUJ NLQR IHVWLYDOHU RJ VNLVHQWUH

'HW HU GLVWULEXHUW IOHUH NRUW L 6jU 7UjQGHODJ
\$QWDOO NRUW VHQQW XWJMjU DY PnOJUXSSHQ
7UjQGHODJ 'HW UDSSRUWHUHV DW DQWDOO NXOWXUN
0HQ KHOOHU LNNH KHU HU DQWDOO NRUW VHQQW XW
VROJWH NRUW)RUVNMHOOHQ PHOORP GH WR I\ONHQH
RPWUHQW OLNH PDQJH nUVYHUN LQQ L RUGQLQJHQ RJ R
VN\OGHV PHVW VDQQV\QOLJ GHQ PHU VHQWUDOLVHUW
HQQ 1RUG 7UjQGHODJ L WLOOHJJ WLO QRH VWjUUH U
QDWXUOLJ QRN KD HW VWjUUH NXOWXUWLOEXG HQQ I
7UjQGHODJ RJ 6jU 7UjQGHODJ VRP DOWVn KDU Q U L
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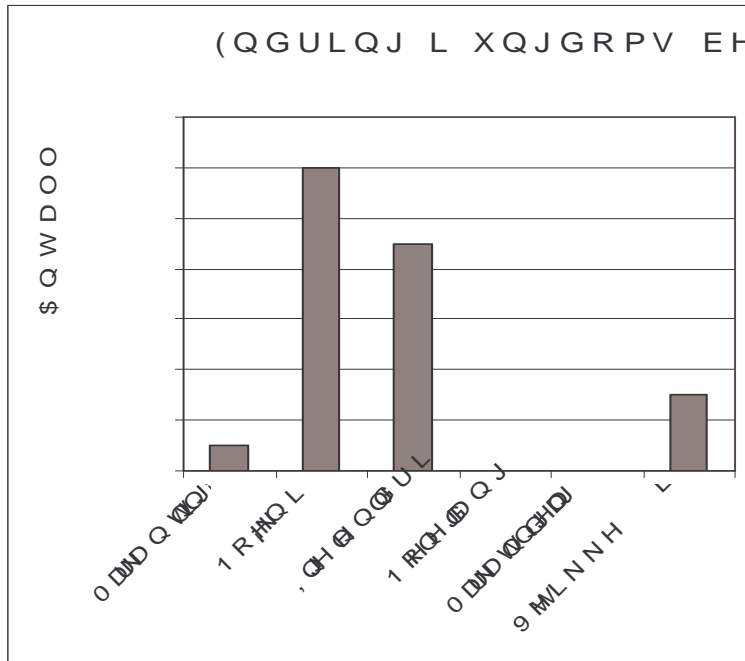
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HUIDULQJHU IUD DUEHLGHW PHG NXOWXUNRUW HQH

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HW ODQJVLNWLJ DUEHLG 7LO WURVV IRU VY UW IRUVNM
MHYQW RYHU HU OLWH NMHQW EODQW XQJGRP PHG XC
IUHPKHYHU DW GHWWH HU HQ JUXSSH GHW HU YDQVNH
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HQQ GHW PDQ DQWRN IjU RUGQLQJHQ EOH ODQVHUW
PHOORP I\ONHQH L GHQ IRUVWDQG DW NRUWHW NQDSV
I\VLVN NRUW PHQV Q U KDU VNDIIHW VHJ GHW L 1R
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JMHOGHU DOOH I\ONHU 9LGHUH YLVHU E\±ODQG GLPH
.XOWXUNRUWHW IUHPVWnU VRP HQ E\RUGQLQJ 'HWWH J
'HW HU E\XQJGRP VRP VNDIIHU VHJ RJ EUXNHU NRUWHW
PHU DWWUDNWLYH IRU E\XQJGRP HQQ IRU XQJGRP L GL
JRGH IHVWLYDOWLOEXG VLVWQHYQWWLVVNDQGHUWGLM
DW HUIDULQJHQH MHYQW RYHU HU JRGH L E\HQH 6HOY
RSSO\HVH RP DW GHW HU YDQVNHOLJ n VNDIIH DUUDQJ
PDQJH DUUDQJjUHU RJ GHW LQQHQIRU YDULHUWH NXC
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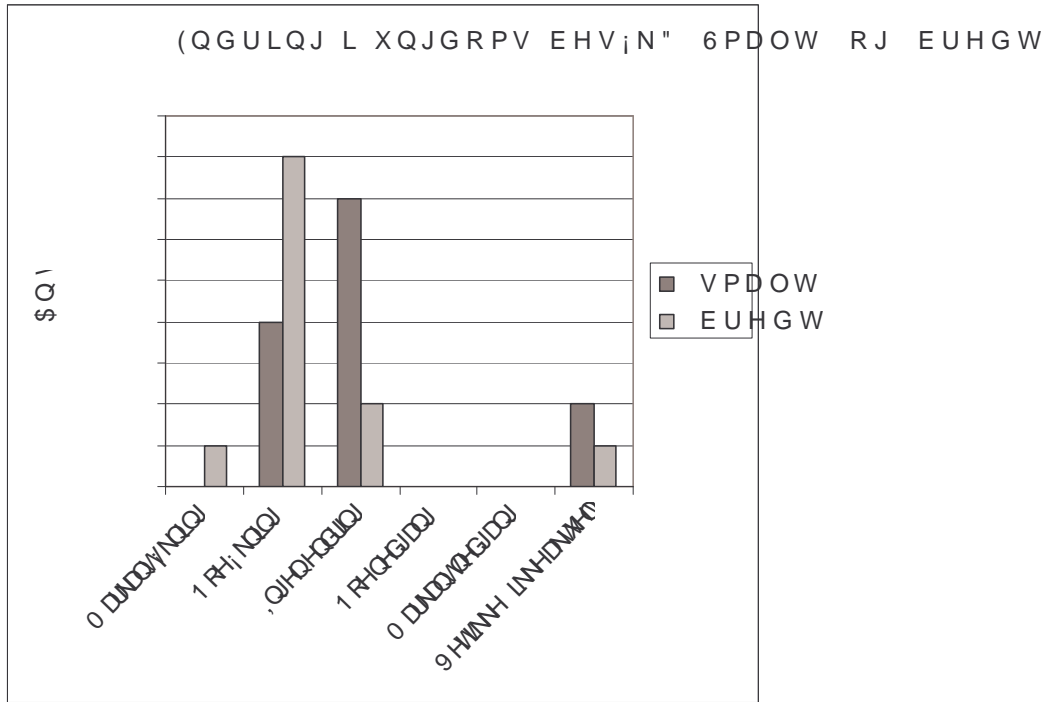
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 IRU P\H PHUDUEHLG GHWWH YDU YLNWLJ IRU IOHUH 5
 YLVV ;NQLQJ L EHV;N DY XQJGRP HWWHU DW GH EO
 XHJHQQ\WWLJH EHJUXQQHOVHU IRU n Y UH PHG L RU
 EHJUXQQHOVHU VRP KDQGOHU RP GHQ ;NRQRPLVNH HJ
 PDQJH DUUDQJ;UHU KDQGOHU GHW RP HQ DQOHGQLQJ
 ;NRQRPLVNH JUXQQHU HOOHUV LNNH YLOOH Y UW L VW
 DNW;UHU QDWXUOLJ QRN RSSJLU ;NW RPHVWQLQJ VR
 RUGQLQJHQ QHYQHU WHDWUH NXOWXUKXV PXVHHU R
 XWYLGH GHQ NXOWXUHOOH KRULVRQWHQ IRU XQJGRP
 RJVn GLVWULNWKHQV\Q .XOWXUNRUWHW NDQ ELGUD V
 WLO XQJGRP L NRPPXQH HOOHU UHJLRQH 'HW VRP
 HOOHU IRUEHGULQJVS RWHQVLD P LUNXOWXUNRUWHW RUGQL
 2YHU KDOYSDUWHQ DY UHVSRRGHQWHQH RSSJLU DW GH
 WLO YLUNVRPKHWHQV DUUDQJHPHQWHU HWWHU DW GH
 KYRUGDQ VYDUHQH IRUGHOWH VHJ Sn VS;UVPnO RP GHW



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IOHUH EODQW GH VRP UHSUHVHQWHUHU 'EUHGH' NXO
URFNHNRQVHUWHU P P VRP PHOGHU RP ;NQLQJ H
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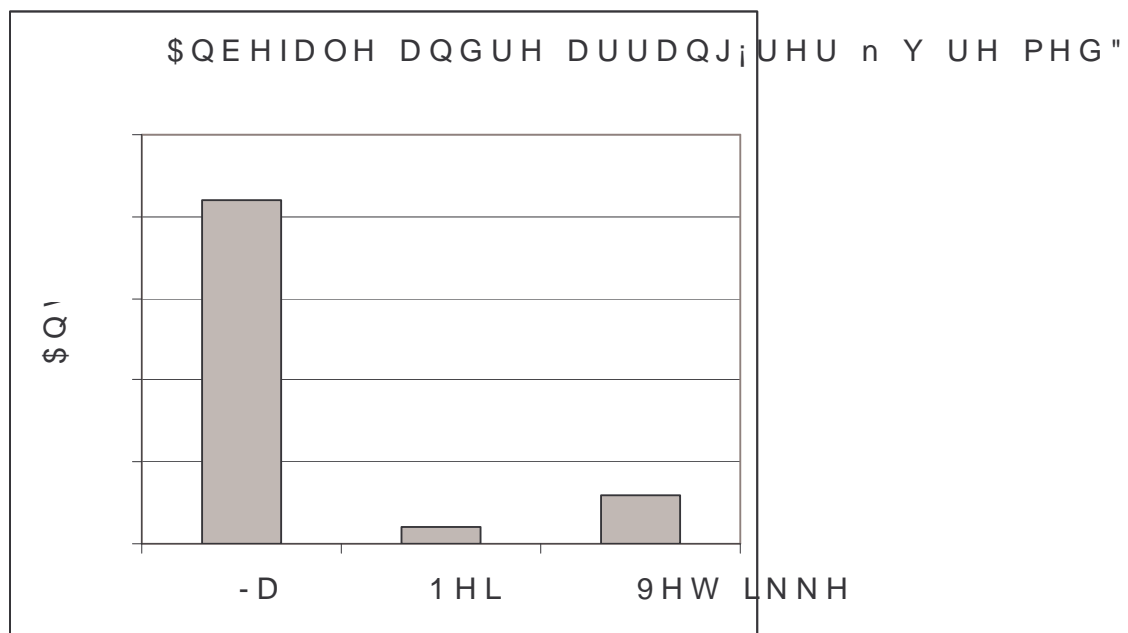
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'PDUNDQW ;NQLQJ' L XQJGRP V EHV;N HWWHU DW GH
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WDOOHQH LQGLNHUHU GHUPHG DW NXOWXUNRUWHW L
NXOWXUWLOEXGHQH VRP XQJGRP EHQ\WWHU VHJ PHVW
XQGHUV;NHQVHQ EODQW NXOWXUDUUDQJ;UHU KDU In F
P D R Sn LQJHQ PnWH JHQHUDOLVHUEDUH WLO GH P
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VPDO NXOWXU VRP NRPPHU WLO XWWU\NN L ILJXUHQ RY
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1RHQ JLU XWWU\NN IRU n Y UH RYHUUDVNHV RYHU DW
RSSO\VHU RJVn DW PDQ KDU VHWV OLWH WLO NXOW
NXOWXUWLOEXG V\QHV RJVn n KD UHNUXWWHUW UHODW
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QRUVNH ILOPHU RJ XWHQODQGVNH NYDOLWHHWVILOPHU
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VRP OLWH LQWHUHVVDQW IRU XQJGRP 'HQQH YLUN
I\ONHVNRPXQH QEHJ\QW n SOXNNH XW RJVn QRHQ P
HQNHOWH YLUNVRPKHWHU VRP PNDUSQLQJL W W QJGURPWH E HD
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GHQ)OHUH VNULYHU DW GH KDU VHWW OLWH WLO EU
PDQJOHQGH HEDUNHGVI;ULQJHQ VHWVHW O\VHU DW RUGQLQJHQ
RJ EHGUH \$UUDQJ;UHU L 5RJDODQG VNULYHU GHVXWH
IRU XQJGRP QRH VRP VDPVYDUHU JRGW PHG I\ONHV
NXOWXUNRUWRUGQLQJHQ GHU 'HW DW PDUNHGVI;ULQJ
RJ HOOHU IHLOUHWVHW HU HQ RSSIDWQLQJ VRP XWV
VDPVYDUHU JRGW PHG GHW VRP NRP IUDP L LQWHU
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3n VS;UVPnOHW 'YLO GX DQEHIDOH DQG UH DUUDQJ;UHU
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+HU YDU GHW LQJHQ IRUVNMHOOHU PHOORP VPDOH RJ E



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VYDU

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RUGQLQJHQ 'VHWWHU VHJ' RJ EOLU LQQDUEWHGHUWHQ n
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DUUDQJjUHQH YLO DQEHIDOH DQGUH NXOWXUDUUDQJjU
JMHOGHU XDYKHQJLJ DY NXOWXUIRUP 'HWWH HU HW XW
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VWRUH XWVODJHQH L IRUP DY EHVjN 9L KDU LNNH IX
PHOORP GH WL I\ONHQH QnU GHW JMHOGHU DUUDQJjUHU
HU SRVLWLYH WLO RUGQLQJHQ Vn n VL DOOH YLO DQE
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EHQ\WWHU VHJ DY GHQ

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LQWHUYMXXHW IRUVNHUHQ PHU HQQ RPYHQGW IRUGL G
JUXQQ WLO DW NMHQQVNDSHQ YDU PLQGUH NDQ KD Y U
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I UUH EODQW YHQQHU RJ EHNMHQWH DY GHOWDNHUQH
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VD HQ GHOWDNHU (Q DQDQV IGHWNDRSSMRJEDUH H
DUUDQJHPHQWHU L KDOYnUHW RJ DW PDQ GHUIRU VSDU
EOLU DWWUDNWLYW ,PLGOHUWLG VUDO GHW QHYQHV D
KHOJHQH RJ EHQ\WWHU GHW VRP HU DY WLOEXG GHU
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VRP HQ VWRU EDUUDQJHPHQWHU Vn VnNXQQH PDQ WHQN
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NMHQQVNDSDW WHUVNH0HQ IRU n ILQQH XW PHU RP I
LQWHUYMXXHUHQ RP LQKROGHW L NXOWXUNRUWHW H
NXOWXUNRUWHW EXUGH JL UDEDWW L DOSLQWDQOH
GLVWULNWWVWHQNLQJ UXQDQWSRUDWHSW QW DQOHDEHQWLS

\$OW L DOW LOOXVWUHUUH GH WR IRNXVJUXSSHQH VDP
GLVWULNWHU , E\HNMHQDQWLDSDRGRPLQJHQ SRWHQVI
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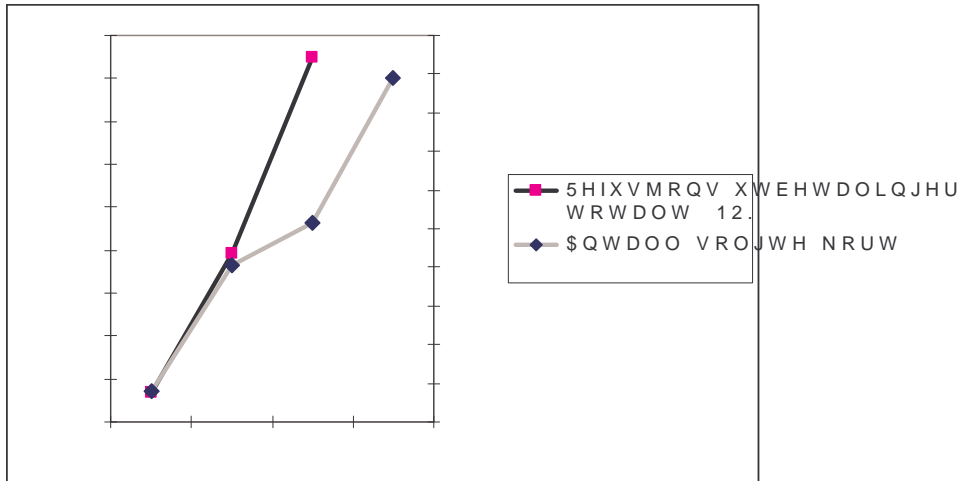
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'HOWDNHUQH EnGH L 6WDYDQJHU RJ L 5\I\ONH HWWI
RUGQLQJ VOLN DW HW NXOWXUNRUW L 5RJDODQG NXQ
4XDUW IHVWLYDOHQ 'HW KDGGH LI;OJH GLVVH LQIRUPD

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, GHWWH NDSLWOHW EUXNHU YL 5RJDODQG VRP FDVH IR
DY KYRU P\H NXOWXUNRUWHW EUXNHV RJ WLO KYD

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NRUWEUXNHUH KDU ;NW JUDGYLV 5HIXVMRQVXWEHWD
NU L QRH VRP HU HQ PDUNDQW ;NQLQJ 5
XWJMRUGH GHUPHG Q U KDOYSDUWHQ DY I\ONHVNRPPX
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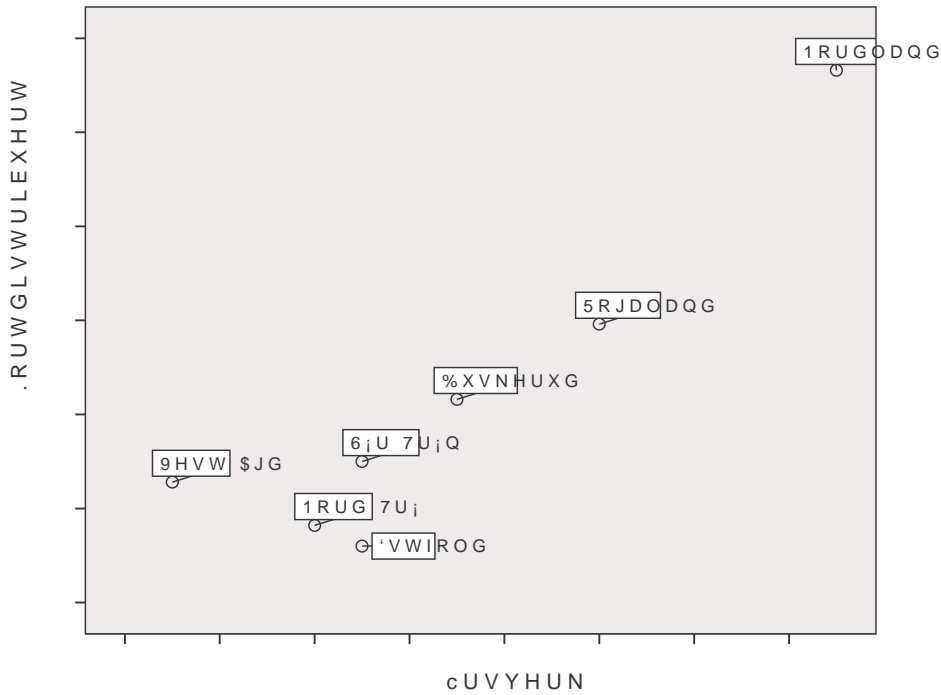
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Vn IUHPVWnU WDOOHQH VRP ODYH , DOGHUVJUX
RSSJLU n KD EHVjNW WHDWHU PXVLNDO HOOHU UHY\
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.RUW GLVWULEXHUV L DY PnOJUXSSHQ HWWHU nUVYHUN



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IULVWH HQ IRUNODULQJ

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 EXQQHQ DY GULYH LQQVDOJ DY NRUWHW WLO EnGH XQ
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 PnOJUXSSHQV ;QVNHU VDPW ILQQH XW KYRUGDQ PD
 (UIDULQJHQH YLVHU DW PnOJUXSSHQ HU YDQVNHOIJ n
 WHQNQLQJ IUD I\ONHVNRPPXQH QV VLGH'HQVPHHQ UNIRNUG
 HQ YDQOLJ WLOVNXGGVRUGQLQJ KYRU GX XWO\VHU PL
 'HW NUHYHU ODQJW PHU RSSI;OJLQJ EnGH6 OLYNWLUN
 'HQWUHSUHQ;UVNDS' NUHYHU DOWVn HW NRQWLQXHUOL
 RJ DUUDQJ;UHU 9L YLO PHQH DW VDPHQKHQJHQ L I
 EHW\GQLQJHQ DY VOLNW 'HQWUHSUHQ;UVNDS' RJ PHU
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'HW HU HOOHUV LQWHUHVVDQW n PHUNH VHJ DW DQW
NXOWXUNRUWHW L GHQQH VDPHQKHQJ IUHPVWnU

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JM;UH %O D KDU 1RUGODQG PDQJH WLOEXG VRP DQGU
WUHQQLQJVHQUH VNLVHQWUH RVY , IOHUH DQGUH
LNNH NDQ GHILQHUHV VRP 'NXOWXUDNWLYLWHWHU' P
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WUHQQLQJ R O RJ NRUWWH HU DOWVn JUDWL V L 1RUG
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EUHY KMHP WLO DOOH L PnOJUXSSHQ HWWHU RYHUH
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KRV IRUHOGUH HQQ KRV XQJGRP VHOY 6DQQV\QOLJYLV
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VW; UUH E\ VHQUWUD 2UGQLQJHQ PHG 'HOHYHU VHOJHU V
V UOLJ KYD JMHOGHU GHW n UHNUXWWHUH VNROHNODV
WDWW Sn VHJ RSSJDYHQ PHG n VHOJH NRUWWH RJ NRU
KDU DQWDNHOLJYLV PHG DW GHW HU OLWH WLOEXG L
VRP KDU HQ PHU VHQUWUDOLVHUW EHIRONQLQJVWUXNW
PHU HIIHNWLY VDOJVNDQDO HQQ EHVWLOOLQJ RYHU QH
WLO n KD P\H PHG EHVNMHG HQ LQQVDWV n JM;UH ò GD
JMRUW DUEHLGHW PHG n V\QOLJJM;UH RUGQLQJHQ IRU
DYWDOHU PHG NXOWXUDUUDQJ; UHU YDQVNHOIJHUH HQ
GHW VRP RP GHW OHQJH YDU QRH DY HQ 'FDWFK ' VL
LQIRUPDVMRQ 'H DQVYDUOLJH L I\ONHVNRPPXQH Q V\Q
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n Jn LQQ L HQ RUGQLQJ VRP LNNH HU JRGW PDUNHGVI;U
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PnOJUXSSH 'HUPHG NDQ PDQ KD EUXNW WLG RJ UHVVXU
\QJVWH ± nU RJ GH HOGVWH ± nU PHQV Q U DC
EUXNWH NRUWWH EHIDQW VHJ L GHQ PLGWUH DOGHUV
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VNDO GHW RJVn IUHPKHYHV DW 1RUG 7U; QGHODJ R

NXOWXUNRUWRUGQLQJHQ L HW GU; \W KDOM nUHQD VGDHW D
RSSO \VQLQJHU IUD VLVWQHYQWH I \ONH YLVHU RJVn D
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PnQHGH HWWHU DW PDQ ILNN IHVWLYDOHU PHG L RUGQ
HQ LQWHUHVVDQW FDVH KYRU PDQ L O;SHW DY VY UW
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\$SUSRV EHW \GQLQJHQ DY 'HQWUHSUHQ;UVNDS' VHU G
'JRGH' RJ 'RQGH VLUNOHU' DY L PDUNHGVI;ULQJ RJ
LQWHUHVVH 9HVW \$JGHU UHSUHVHQWHUHQ HQ LQWHU
EHYHJHW VHJ IUD HQ 'RQG VLUNHO' WLO HQ 'JRG VLUNH

2P n YHNNH LQWHUHVVH IRU NXOWXUNRUWHW

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RUGQLQJHQ NMHQW EODQW XQJGRP HQQ PDQ DQWRN Sn
WLO DW DUEHLGHW IUHPVWnU VRP QRH DY HW HQWUHSU
IRUKROG 2UGQLQJHQ HU OLWH NMHQW RJ PDUNHGVI;U
RIWH LNNH PnOJUXSSHQ

6HOY RP IOHUH I \ONHU PHOGHU DW GHW KDU YLVW VH
RUGQLQJHQ Vn IUHPVWnU GHW MHYQW RYHU OHWWHUH
GLVVH HQQ L VHOYH PnOJUXSSHQ 'HWWH JMHQVSHLOHY
DUUDQJ;UHU RJ IRNXVJUXSSHQH EODQW XQJGRP 9LUNY
WLO RUGQLQJHQ PHQV XQJGRP L DOOH IDOO GH YL L
VWRU LQWHUHVVH IRU NXOWXUNRUWHW ORW VHJ LNNH V

'HW VLVWH HU EHW \GQLQJVIXOOW 6HOY RP YL VHOYVD
URJDODQGVXQJGRPPHU Vn DQW \GHU V \QV SXQNWHQH
XQJGRPPHU VRP KDU VNDIIHW VHJ NRUWHW LNNH XWH
ILQQH JRGH PnWHU n PDUNHGVI;UH NXOWXUNRUWHW %
PDUNHGVI;ULQJ RJ HL KHOOHU GnUOLJ WLOJMHQJHOLJ
NRUWHW 'LVVH NMHQWH DOOH JRGW WLO NRUWHW R
DQVNDIIHOVHVPnWHQ VRP JMRUGH DW GH LNNH KDGGH
PDQJOHQWUHVHJ VLGHQ NXOWXUNRUWHW L 5RJDODQ
WLOEXGHW GH DOOHUHG H YDU LQWHUHVVHUW L IUD I;U

% \ RJ ODQG

.XOWXUNRUWHW WUHIIHU GHVLGHUW EHVW L E \HQH 'HV
E \HU RJ GLVWULNWHU IUHPVWnU L YnUW PDWHULDOH 'H

6OLN VHWW HU GHW LNNH KHOW UHWIUGLJ n VDPPHQOLNQH W
'HW DW NXQ DY PnOJUXSSHQ L 9HVW \$JGHU RJ L 1RUG 7U;C
GU; \W KDOYnU HWWHU DW RUGQLQJHQ EOH ODQVHUW IUHPVWnU L
YLVHU DW DY PnOJUXSSHQ GHU VNDIIHW VHJ NRUWHW L O;S
'HWWH WDOOHW KDU VRP QHYQW ;NW MHYQW L 5RJDODQG

DW GHQ KDU JLWW VHJ NODUH XWVODJ RJVn L 1RUGODQ
KDU KDWW VRP PnO n XWMHYQH IRUVNMHOOHU PHOORP
GLVWULNWSROLWLVN ;\HPHG 6OLN VHWW HU 1RUG 7U;
VHJ RP I\ONHWV E\ RJ WHWWVWHGVVHQWUD L NXOWX
'Q;GYHQGLJ' ± HQ JRG LOOXVWUDVMRQ Sn KYRU YDQVN
L GLVWULNWHQH VRP L E\HQH RJ KYRU XWIRUGUHQGH
(Q PDUNDQW IRUVNMHOO PHOORP E\HU RJ ODQGNRPPX
LQWHUVMXHQH L I\ONHQHV UDSSRUWHU WLO ..' L V
IRNXVJUXSSHQH YL JMRUGH PHG XQJGRP .RRUGLQDWRU
n ILQQH UHOHYDQWH NXOWXUDUUDQJ;UHU L ODQGNRPPX
QRN DUUDQJ;UHU Sn HWW VWHG WLO DW NXOWXUNRUWH
DUUDQJHUWH PHG XQJGRP L 5RJDODQG YLVWH IRUVN
W\GHOLJKHW (Q WLQJ YQWGHUWH VHOHWXOPLQGHW L 5\
6WDYDQJHU VHOY RP GHQ DOWVn KHOOHU LNNH YDUVV
ODQJW NPMQGMNDOSNQOWXUNRUWHW L 5\I\ONH HQQ L 6W

')LQNXOWXU' RJ 'SRSXO UNXOWXU'

\$QJnHQGH IRUVNMHOOHU PHOORP 'VPDO' RJ 'EUHG'
'SRSXO UNXOWXU' HU NXOWXUNRUWHW VHOHWXOPLQGHW
XQJGRP EHQ\WVHU VHJ PHVW DY IUD I;U MI NDS)
WLOEXGHQH VRP VHU XW WLO n EUXNHV L QRH XWVWU
5RJDODQG RJ QRHQ DY I\ONHQH GHU NXOWXUNRUWHW
VRP I HNV +RUGDODQG \$OOH I\ONHU PHOGHU DW
NXOWXUNRUWEUXNHUH WLO VPDOHUH NXOWXUXWVWU\NN
XQGHUV;NHQVHQ GHU UHSUHVHQWDQWHU IRU 'ILQNXOV
'SRSXO UNXOWXUHQ' UDSSRUWHUHU RP EHV;N IUD NXOV
NODUW JLWW XWVWU\NN IRU DW HYHQWXHOO LQWHUHVVI
HQ KDU IUD I;U L SUDNVLV NLQR

1RHQ LQQVSLOO WLO I\ONHVNRPPXQHGHV YL
NXOWXUNRUWHW

%HVNMHGHQ HOOHU VWRU LQQVDWV" 9HOJ NXOWXU

)RUVNMHOOLJH PRGHOOHU KDU VLQH IRUGHOHU RJ XOH
RJ GLVWULEXVMRQ DY HW I\VLVN NRUW KDU PDQ SRWH
RYHU KYRU PDQJH VRP WLO HQKYHU WLG KDU DQVNDIIF
JRG LQGLNDVMRQ Sn RP XQJGRP ILQQHU NXOWXUNRUW
MXVWHUH WLOEXG RJ PDUNHGVI;ULQJ HWWHU KYHUW)
DUUDQJ;UHU InU PDQ LQGLNDVMRQHU Sn KYRU P\H NR
HYHQWXHOW MXVWHUH RUGQLQJHQ GHUHWVHU (Q PRG
UHIXVMRQ NUHYHU LPLGOHUWLG V\VWHPHU VRP JM;U HC
GHUVRP UHJLVWUHULQJ VNMHU GHU Pn Y UH NMHQW L
RJ IXQVMRQVG\NWLJ 'HUQHVV YLO UHJLVWUHULQJ KR
LQQVDWV \$OW GHWWH NUHYHU ;NRQRPLVNH UHVXUVH
EUXNW WLO GHWWH NDQ SRWHQVLHOW Jn Sn EHNRVWQ
UDEDWVHU RJ HOOHU KYRU P\H DUEHLGVLQQVDWV RJ P
NRUWHWVNRHKO HJHQUHJLVWUHULQJ RJ NM;S RJ LNNH U
YHG n KD HQ NRUWO;V RUGQLQJ PLQLPHUHV GLVVH XW

RYHUVLNW RYHU KYRU P\H NRUWHW EUXNHV RJ WLO KY
PRGHOHU LQQHE UHU HU GHWWH DVSHNWHU VRP I\ON
MXVWHULQJ DY RUGQLQJHQ

0DUNHGVI;ULQJ

\$OO GHQ WLG GHW KDU YLVW VHJ YDQVNHOLJ n JM;UH
UHOHYDQW n SHNH Sn KYLONH PDUNHGVI;ULQJVWUDWH
ILQQHU YL JUXQQ WLO n IUHPKHYH 1RUGODQGV VWUDV
PnOJUXSSHQ 0HG GHQQH IUHPJDQJVPnWHQ InU PDQ H
PDQJH WLOIHOOHU NDQ KD VW;UUH LQWHUHVH IRU GH
NDQ JL DOO GHQ WLG GHW RIWH YLO Y UH GH VRP W
NXOWXU RJ IULWLGVDNWLYLWHWHU *LWW GH PDNUR;I
;NW DUEHLGVOHGLJKHW NDQ VOLNH PHNDQLVPHU YLVH
GHQQH VWUDWHJLHQ HU YHUGW n QRWHUH VHJ IRU GHW

,QQVDWV

'HW V\QHV RJVn n Y UH Sn GHW UHQH DW JRG PDUNHG
'HQWUHSUHQ;UVNDS' , IOHUH I\ONHU HU LQQVDWVHQ
I\ONHVNRPPXQHU VRP KDU ODJW OLWHQ DUEHLGVLQQY
YXUGHUH n ;NH GHQQH 0DUNHGVI;ULQJ NUHYHU VRP Q
GHW n WLOE\ UHWWIHUGLJ WLOEXG Sn WYHUV DY JHRJU
LQQVDWV HQQ GHW GH IOHVWH I\ONHU KDU ODJW LQQ L

'HW HU VRP QHYQW YnUW LQQWU\NN DW NXOWXUNRUWH
VW;UVW V UOLJ VOLN GHW NRPPHU WLO XWWU\NN JMF
\$QWDNHOLJYLV YLOOH EnGH NMHQQVND S WLO LQWHUH
GHUVRP RJVn GHQ ;NRQRPLVNH LQQVDWVHQ YDU VW;UU

9DOJ DY PnOJUXSSH

1nU GHW JMHOGHU PnOJUXSSH Vn KDU I\ONHQH YDOJW
± nU +HU HU HUIDULQJHQH IUD 'VWIROG V UOLJ UHC
NXOWXUNRUWHW L DOO KRYHGVDN HU n ILQQH EODQV
NRQVHQWUHUH LQQVDWVHQ L DUEHLGHW HU GHWWH HY
KDU LQNOXGHUW \QJUH RJ HOGUH DOGHUVJUXSSHU L NX
NXOWXUNRUWHW WUHIIHU EHVW LIW XQJGRP L YLGHUHJ

3ULV Sn NRUWHW

.DUWOHJJLQJHQ YnU JLU LNNH DQOHGQLQJ WLO n NRQN
KDU Y UW PHVW YHOO\NNHW QnU GHW JMHOGHU NXOWX
GH VLVWH HUIDULQJHQH IUD 9HVW \$JGHU NDQ LPLGOHU
KDU I;UW WLO DW IOHUH XQJGRPPHU KDU VNDIIHW VHJ
NRVWHW QRH 'HW DW 7U;QGHODJVI\ONHQH UHGXVHUWH
LQGLNDVMRQ Sn GHW VDPPH RJ RJVn 'VWIROGV HUIDUL
DOOH L YLGHUHJnHQGH VNROH .XOWXUNRUW VRP NRY
;NRQRPLVN JHYLQVW IRU XQJGRP L E\ RJ ODQGNRPPXQ

HW JLWW VWHG YLO HW NRUW VRP NRVWHU NU L K
EHVSDUHOVH 6HOY RP NXOWXUNRUWRUGQLQJHQ RJVn L
PHVW HW EXWINDOX G HW WHQNHV DW IOHQHEXQHGRPHU
YLOOH VNDIIHW VHJ NRUWHW KYLV GHW YDU JUDWLV I
EIVHQWUD 8W IUD GHWWH ILQQHU YL JUXQQ WLO n WLO

1DVMRQDO VDPRUGQLQJ"

'HW KDU Y UW ..'V KHQVLNW DW NXOWXUNRUWHW EOH
DQWDNHOLJ Y UW YLNWLJ IRU n VLNUH ORNDO IRUDQN
PXOLJKHW WLO ORNDO WLOSDVQLQJ WLO I\ONHQHV IRU
GH IRUVNMHOOLJH NXOWXUWLOEXG IRUVNMHOOLJH VWH

1nU GHW JMHUOHGHUQDFVHRVQ DOW Vn YLO YL KHU OLNH
UHVXUVHU Pn DQWDV n KD JnWW PHG WLO XWYLNOLQJ
GH IOHVWH VWHGHU KDU IUHPVWnWW VRP XNMHW WHU
VRP DOOH VNXOOH SU;YHV XW RJ GHUHWWHU HYHQWX
GHUHWWHU 1RHQ NRRUGLQDWRUHU L I\ONHVNRPPXQH
XKHQVLNWVPHVVLJ RJ DW GH NXQQH ;QVNHV PHU RJ NO
LJDQJVDWW 1RHQ HWWHUO\VHU RJVn PHU HUIDULQJVV

+HU HU GHW RJVn YHUGW n QRWHUH VHJ DW IOHUH HW
VDPRUGQLQJ I HNV YLV j YLV QDVMRQDOH DNW;UHU VI
IUHPKHYHW RJVn DW NXOWXUNRUWHW EXUGH NXQQ
5RJDODQGQJGRPPHQH YL LQWHUYMXHW ;QVNHV VHJ
EUXNH I HNV Sn 4XDUW IHVWLYDOHQ 'H PHQWH DW HW
ODQGHW YLOOH Y UW PHU DWWUDNWLYW

(Q YLVV JUDG DY QDVMRQDO NRRUGLQHULQJ PHOORP I\O

(Q RYHURUGQHW YXUGHULQJ DY NXOWXUNRU
, NDS IRUPXOHUWH YL ILUH DVSHNWHU VRP NDQ IRU
PHG NXOWXUNRUWHW 9L SHNWH Sn

EHGUHW IRUPHOW NXOWXUWLOEXG WLO XQJGRP

;NW EUXN DY NXOWXUWLOEXG JHQHUHOW

;NW EUXN DY NXOWXUWLOEXG XQJGRP LNNH YDQOLJ

JHRJUDILVN OLNKHW L NXOWXUWLOEXG RJ EUXN

'HW NDQ WHQNHV P DQGNHGHUWHUWRUGLQJ L GH I\ONHQH KYRU
GHWWH KDU YL LNNH JUXQQODJ IRU n YXUGHUH

6LVWQHYQWH HU LJDQJVDWW JMHQRP QDVMRQDOH VHPLQDUHU

/D RVV DYVOXWQLQJVYLV WD XWJDQJVSXQNW L GLVVH
YXUGHULQJ DY NXOWXUNRUWRUGQLQJHQ H VDPOHW

1nU GHW JMHOCHEGUSIXQNRU PHOW W h ONEXG PDLQ VLQ GHRP V
VHOYH HNVLVWHQVHQ DY HW NXOWXUNRUW VRP IRUP
EHQ\WWH VHJ DY WLOEXG HU HQ RSSI\OOLQJ DY PnOHV
KDU L SULQVLSSHW DQOHGQLQJ WLO n VNDIIH VHJ NRUW
MHYQW RYHU UDEDWWHU VRP IUHPVWnU VRP DWWUDN\
IRUPHOOH WLOJDQJHQ WLO NXOWXUWLOEXG VW\UNHW I
KDU JMRUWLPHWLJHU IRU XQJGRP n WD GHO.'L XOLNH

+HU KDU LPLGOHUWLG E\±ODQG GLPHQVMRQH VWRU EH
KD VLNQCHWJGRPPHU L I\ONHW GHQ VDPPH PXOLJKHWHQ
NXOWXUWLOEXG .XOWXUNRUWHW IUHPVWnU L DOO KRYI
GHU NRUWHW DQVNDIIHV GHU GHW EUXNHV RJ GHW H
JUDG ILQQHV

+YD DQJnU EXQNDY NXOWXUWLOEXG nJHWHUHEHWL G VWU
JUXQQODJ IRU n NRQN;NXQEGH YLP LNNHQWDXU O O NHVYLV
EUXN DY NXOWXUWLOEXG i;U RJ'HHW DMUIOWURUIGONQVNB
KDU KDWW ;NHQGH UHIXVMRQVXWEHWDOLQJHU RJ HW V
LNNH Q;GYHQGLJYLV DW XQJGRP RIWHUH RSSV;NHU NXO
Y UH XWWU\NN IRU DW GH VRP XDQVHWW YLOOH RSSV;N
NXOWXUNRUWHW 9nUH GDWD IUD NXOWXUDUUDQJ;UHU I
DUUDQJHPHQWHU HWWHU DW YLUNVRPKHWHQH EOH
JMHQQRPDQJHQ KHU YLVHU LPLGOHUWLG DW ;NQLQJHQ
Y UW VWRU +DOYSDUWHQ DY DUUDQJ;UHQH RSSJLU RJ
\$UUDQJ;UHU SHNHU GHVXWHQ Sn DW NRUWHW HU OLW
PDQJH I\ONHVNRPPXQUH &DVHDQDO\VHQ IRU 5RJDODQO
JMHQQRPVQLWWOLJ KDU NM;SW ELOOHWW JMHQQRP NXO
ODYW WDOO WLO DW GHW NYDOLILVHUHU WLO n NDOOH
'HW RYHURUGQHWL LQQWU\NNHW YL VLWWHU LJMHQ PHO
VWRU ;NQLQJ L EUXN DY NXOWXUWLOEXG 'HWWH VHU
NXOWXUNRUWPRGHOO GH HQNHOWH I\ONHU KDU YDOJW
IOHUH I\ONHU PHOGHU RP VWLJHQGH LQWHUHVH IRU N

1nU GHW Vn JMHOCHEGUSIXQNRU PHOW W h ONEXG PDLQ VLQ GHRP V
PHOGHU NRRUGLQDWRUHU MHYQW RYHU DW PDQ LNNH
'VPDOHUH' NXOWXUIRUPHU 1RHQ DUUDQJ;UHU UDSSRU
EHV;N HWWHU DW GH EOH PHG L NXOWXUNRUWRUGQLQJ
'HW VRP GRPLQHUUH EUXNHQ DY NXOWXUNRUWHW HU N
HU VDQQV\QOLJJMRUW DW NXOWXUNRUWHW LNNH L QRH

6WDWLWLVV. XOWXUWLOEXG PDLQ VLQ GHRP V
OHQ GD GLVVH WDOOHQH LNNH HU I\ONHVYLVH KDU YL LNNH NXQQ
I\ONH 0DQ NXQQH WHQNH VHJ DW VLGHQ DY ODQGHV I\ONH
LQQYLUNQLQJ RJVn Sn QDVMRQDOH WDOO)UD WLO KDU X
EHV;N WLO DOOH GH IRUVNMHOOLJH DNWLYLWHWHQH GHW ILQV GD
NDQ Y UH DW QHGJDQJHQ LNNH KDU IXQQHW VWHG HYHQWXHOW Y
LPLGOHUWLG LNNH JUXQQODJ IRU n NXQQH VL QRH RP

VW;UUH JUDG RSSV;NHU NXOWXUWLOEXG GH LNNH YDQ
JMHOGH DOOH \ONHU XDYKHQJLJ DY KYLONHQ PRGHO

3n SXQNWJRJUDILVN OLNKHW L INXGMXUWILKVE XGV RLJQ JEHUX
NODUW n RSSQn GHWWH 6RP QHYQW IUHPVWnU NX
WHWWVWHGVRUGQLQJ 'HWWH JMHOGHU EnGH WLOEXG
WLOEXGHW DQVNDIIHOVH RJ EUXN DY NRUWHW)RUVN
JMHQQRP YnUW DUEHLG 'HW \ONHW VRP NRPPHU Q UP
VRP IHRWPHUW WIHUGLJ PHOORP E\ RJ ODQG HU DQWDN
NXOWXUNRUWHW ILQDQVLHUHU WUDQVSRUW WLO RJ IU
0HQ RJVn L GH WR \ONHQH GHU GLVWULNWWVWHQNQLQJ
1RUGODQG JLV GHW XWWU\NN IRU DW NXOWXUNRUWHW

8W IUD HQ VDPOHW YXUGHULQJ ODQJV GLVVH ILUH DV
NXOWXUNRUW IRU XQJGRP Vn ODQJW NXQ L EHJUHQVHW
IRUVWnWW GHP KHU

\$OWHUQDWLYHU IRU NXOWXUNRUWRUGQLQJH

8W IUD GHQQH YXUGHULQJHQ YLO YL VNLVVHUH QRH
NXOWXUNRUWRUGQLQJHQ

D .XOWXUNRUWRUGQLQJHQ DYYLNOHV

E .XOWXUNRUWRUGQLQJHQ YLGHUHI;UHV PHQ OHJ
2UGQLQJHQ SULRULWHUHU E\HU RJ WHWWVWHGHU

F .XOWXUNRUWRUGQLQJHQ YLGHUHI;UHV L GDJHQV
UHYLGHUHU RUGQLQJHQ EDVHUW Sn HUIDULQJHQH

\$OWHUQDWLY D HU DW RUGQLQJHQ DYYLNOHV %HJU>
NXOWXUNRUWHW MHYQW RYHU HU UHODWLYW OLWH NMH
GHUPHG Pn VLHV n KD Y UW EHJUHQVHW 0RW GHWWH
RUGQLQJHQ KDU KDWW NRUW YDULJKHW RJ UHODWLYW
QHYQH V DW LQWHUHVH VHQ IUHPVWnU VRP ;NHQGH PDQJH

9L VNDO DYVOXWQLQJVVYLV GLVNXWHUH DOWHUQDWLYH
V UOLJ EOLNN IRU E\±ODQG GLPHQVMRQH

'HW DW NXOWXUNRUWHW YLVHU VHJ n Y UH QHVWHQ XW
PDQ WD NRQVHNYHQVHQ DY Sn XOLNH PnWHU

, DOWHUQDWLY E OHJJHV RUGQLQJHQ WLO UHOHYDQW
GLUHNWH DYWDOHU PHG GLVVH 5HOHYDQWH NRPPXQ
RUGQLQJHQ PHG PDUNHGVI;ULQJ RJ HWDEOHULQJ DY
\$OWHUQDWLYHW LQQHE UHU HQ VWUHQJHUH JHRJUDI
NRQVHQWUHUHU VHJ RP E\HU RJ WHWWVWHGHU ,QQVDV
PXOLJ DW PDQ L E\HQH NXQQH InWW HQ ;NQLQJ L XQJG
RJ RYHU 7LO JMHQJMHOG LQQHE UHU GHW DW GHW J
YLO PnWWH WRQHV QRH QHG MI YnUW SNW RYHU
IRU VHJ HQ YLVV QDVMRQDO VDPNM;ULQJ GHU HW NXO

Sn WYHUV DY GLVVH NRPPXQHQH RJ GHU XQJGRP L O
DQOHGQLQJ WLO n VNDIIH VHJ NXOWXUNRUW IRU EUXN L
2JVn L DOWHUQDWLY F NXQQH PDQ WHQNH VHJ DW PDQ
VRP QHYQW L HU \ONHVNRPPXQHQ WLOWHQNW HQ
JMHOGHU IRU NXOWXUSROLWLNHHQ 'HWWH LQQHE UHU
\ONHW LNNH EDUH VHQWUDOH VWU;N 'HW YLO EU\N
NXOWXUNRUWHW IRU E\XQJGRP , O\V DY NDUWOHJJLQJ
UHDOLVWLVN DW NXOWXUNRUWHW L RMCORP EX RRJUDQD
n RSSQn OLNW NXOWXUWLOEXG Sn KMHPVWHGHW PnW
NXOWXUYLUNVRPKHWHU L GLVWULNWHQH 9L ILQQHU VC
E;U SULRUMWLOEHUNXOMX UDNWLVN HU RJ L SUDNVLV YL
'HUQHVW E;U PDQ V;NH n EHLGUDQDQGXGXGRVLFHEXGHW
PnWH n WD NRQVHNYHQVHQ DY DW NXOWXUNRUWHW YLV
JUDWLW 'HWWH HU HQ WLOUnGLQJ JHQHUHOW WLO \N
WHUVNHOHQ IRU XQJGRP WLO n VNDIIH VHJ NXOWXUNRU
GLPHQVMRQH (W JUDWLW NRUW YLO DQWDNHOLJ ;N
NXOWXUNRUW IRU n EUXNH QnU GH EHV;NHU \ONHWV
IOHUH \ONHU L GDJ I HNV 5RJDODQG RJ %XVNHUXG F
HW NXOWXUNRUW VRP NRVWHU QRH VY UW IRUVNMHOOC
ILQQHU GHW RJVn ULPOLJ n WLOUn DW GH ;NRQRPLV
DOWHUQDWLY F GHWWH JMHOGHU IRU Vn YLGW RJVn
WHUVNHOHQ IRU DOOH XQJGRP PHU WLO n VNDIIH VHJ N
I;UH WLO EHGUH PDUNHGV;ULQJ VRP YLO V\QOLJJM;UH
HQGULQJHU NDQ RJVn WHQNHV L NRPELQDVMRQ PHG WU

'HW HU IRUGHOHU RJ XOHP SHU IRUEXQGHW PHG EnGH E

'HW HU Sn GHQ HQH VLGHQ ULPOLJ n DQWD DW DQVDW
NMHQQVND S WLO XQJGRP VNXOWXUHQH L GH DNWXHOOH
DOWHUQDWLY E HQQ GHW \ONHVNRPPXQDOW DQVD
YLUNHRPUnGH HU DOOH NRPPXQHU L GH UHVSHNWLYH I
\$QWDNHOLJ HU NRPPXQHQH MHYQW RYHU Q UPHUH EUX
)RUIDWWHUQH DY UDSSRUWHQ '.XOWXUSROLWLNHHQ RJ
IUHPK;YQJIROGHW DY XQJGRP VNXOWXUHQH WUDO GLPH
NXOWXUSROLWLVN DUEHLG 'HW HU I HNV VRVLROR
NXOWXULQWHUHVHU HU IRUEXQGHW PHG EO D VRVLDQ
9L VSXUWH DOOH NRRUGLQDWRUHU RP GHW
YDQVNHOLJHUH n Qn HQQ DQGUH ± VSHVLILNW RP GHW
VWDWXV HOOHU HWQLVN EDNJUXQQ 8WRYHU E\±ODQG G
JUDG WHPDWLVHUW L LQWHUYMXHQH 'H IOHVWH KDG
SRWHQVLHOOH IRUVNMHOOHU LREUXN;YQDLYN;XOWXUHNV
KD KDWV V UOLJ VWRU EHW\GQLQJ L SODQOHJJLQJ RJ
RYHU PDQJIROGHW DY XQJGRP VNXOWXUHU Sn HW JLWW
IRUYDOWQLQJHQ HU EUXNHUQH 'HUVRP RUGQLQJHQ IR
OHJJHV WLO NRPPXQHU E NDQ GHW KHQGH DW KHQV\
NDQ LYDUHWDV EHGUH XWHQ DW GHW N;YQDLYN;XOWXUHNV

(QNHOWH PHQWH DW IOHUNXOWXUHOOH PLOM;HU YDU YDQVNHOL
IRUVNMHOOHU XW IUD PLQRULWHWV HOOHU PDMRULWHWVEDNJU
IRUVNMHOOHU DUWHU VHJ

VOLNH KHQV\Q 6OLN NDQ GHW WHQNHV DW VHOY RP PD
RJ ODQG MI SNW Vn YLO PDQ L DOWHUQDWLY E E
DY GHPRNUDWL RJ OLNKHVVDVSHNWHW I HNV NQ\WV
EDNJUXQQ

3n GHQ DQGUH VLGHQ YLO GHW DW E\HU RJ WHWWVWH
I HNV L 5RJDODQG 'VWIROG RJ \$JGHUI\ONHQH VOLN
NXOWXUWLOEXG Sn WYHUV DY NRPPXQHJUHQVHQH NXQ
ODQ NDQ IRUHVWLOOH VHJ DW I\ONHVNRPPXQH HONOH
E\HU pQ RIIHQWOLJ LQVWDQV HQQ E\NRPPXQHU VRI
LPHOORP 0RW DOWHUQDWLY E Pn PDQ RJVn IUHP
LQIUDVWUXNWXUHQ EO D GLVWULEXVMRQVRUGQLQJHU
RJ NRPSHWDQVHQ VRP HU E\JJHW RSS L SUjYHSHULR
I\ONHVNRPPXQH +YLV NRPPXQH VNXOOH RYHUWD
RSS Sn Q\WW , DOWHUQDWLY F YLO LQIUDVWUXNWX
EHYDUHV RJ NDQ Q\WWLJJMjUHV YLGHUH

5HIHUDQVHU

%DUQH RJ OLNHVWLOOLZS.SVGHNS/DU WRHPG Q WHNW U IRU EDU
1RUJHW PHOG QU

%RXUGLHX 3 'bVW@QNVMRQH (Q VRVLRORJLWORNULWL
3D[)RUODJ

.RPPXQDO RJ UHJLRQDOGHWSRDUWLHPH/PWbV/LQJ QU
'1\H RSSJDYHU IRU ORNDOGHPRNUDWLHW ± UHJLRQD

.XOWXU RJ NLUNHGH.SDUWXHUSROWWWbMNPPHVG QU

.XOWXU RJ NLUNHGHSDSWSIPHQWHW

.XOWXU RJ NLUNHGHSDUPMOPHQWHW ± .XOWXUH
IRU IUDPWLGD

.XOWXU RJ NLUNHGHSDUWHPHQWHW 6W SUS QU

0DQJVHW 3XOWXUOLY RJ2MORYD8QWQHQV/LWHWVIRUODJHV

5RVVRZ , '8QJGRPPHQ Qn WLO GDJV ± WDOO I
7LGVVNULIW IRU 8QJGRPVIRUVNQLQJ

6WDWLVLVN VHXOWXUQDVEWDMIRUWHNRIILVLHOOH VWDWLVL

6WDWLVLVN VHXOWXUQDVEWDMIRUWHNRIILVLHOOH VWDWLVL

9DDJODQG - +)DXVNH + /LGpQ.X50VbXWLSRIORWENSHHQV
XQJHRUVN NXOWXUUnG 5DSSRUW QU

,QWHUQDWLRQDO 5HVHDUFK ZZZZLWXXVHR RI 6WDYDQJHU \$6

9HGOHJJ

,QWHUVMXJXLGH ± NRRUGLQDWRUHU L \ONHVNR

)\ONH

1DYQ RJ VWLOOLQJ

+YRUGDQ HU RUGQLQJHQ RUJDQLVHUW XWIRUPHW L \ONHW"

)\ONHVNRPPXQHQV). EXGVMHWW IRU RUGQLQJHQ VWDW). DQ

+YLONHW nU EOH NXOWXUNRUWHW LQQI;UW"

3ODQOD). RUGQLQJHQ DOHQH")iULQJHU IUD ..'"

+YD YDU EHJUXQQHOVHQH IRU DW RUGQLQJHQ EOH LQQI;UW" +YD
NXOWXUNRUWHW"

+YRU KHQWHW). PLGOHQH IUD")ULVNH PLGOHU HOOHU DYO;VWH C

0nOJUXSSH DOGHU

3ULV Sn NRUWHW

3ULV Sn DUUDQJHPHQWHU

+YRUGDQ VNDIIHU XQJGRP VHJ NRUWHW" ,QWHUQHWW \VLVN HW

+YRUGDQ GLVWULEXHUHV NRUWHW"

0\$5.('6)'5,1* ,+YRUGDQ JnU GHUH IUHP IRU n In XQJGRP WLO n VNDI

+YRU PDQJH KDU VNDIIHW VHJ" +YRU PDQJH L PnOJUXSSHQ"

0\$5.('6)'5,1* ,, +YRUGDQ JnU GHUH DUUDQJHPHQWHU
+YLONHQ IHGDFN KDU GHUH InWW IUD YLUNVRPKHWHU VHQH

+YLONH NXOWXUDUUDQJ;UHU HU PHG L RUGQLQJHQ"

+DU GHUH UHIXVMRQ HOOHU WLOVNXGG WLO YLUNVRPKHWHQH" +Y

(U NRPPXQHQH PHG L RUGQLQJHQ Sn QRHQ PnWH"

)RNxVHUHSXG EODN/SHW HOOHU GHUW LSHHQQW GRPFWRN
R O NOXEEHU

.MHQQHU GX HUIDULQJHU IUD DQGUH \ONHU PHU SRVLWLYH PHU

9LO GX VL DW GHUH KDU O\NWHV L n Qn XQJGRP" +YRUIRU KYRUIR

+YRU EUXNHRUWHW"

+YLONH XWIRUGULQJHU VHU GX DW GHUH P;WHU PHG n UHNUXWWH
XQJGR RRVLDOH ODJ PLQRULWHWVJUXSSHU

+YLONH W\SHU NXOWXUDUU GRPLQHUHU XQJGRP V EUXN DY NRUWH

+YRUGDQ HUWEHDXWHHQ INRLQR LGUHHW PXVLNN IHVWLYDOHU

+YREUXNHV NRUWHW" %\ ODQG"

+YD HU IRUVNMHOHQ PHORP E\ ODQG"
8WIRUGULQJHU GHUH KDU KDWW" WHNQLVN GLVWULEXVMRQ WLO
+DU GHUH PHNDQLVPHU IRU NRQWUROO" JUDWLVSVDVDMHUHU Y
9LO GX VL DW RUGQLQJHQ HU YHOO\NNHW" +YRUIRU KYRUIRU LNNH
(U GHW QRH GHUH YLOOH JMRUW DQQHUOHGHV KYLV GHUH KDGGH
IUD DQGUH I\ONHU"
+YRUGDQ HU RUGQLQJHQ IRUDQNUHW L GDJ" 3ROLWLVN IRUVYDU
IMHUQH"
1RH GX YLO WLOIj\H"

,QWHUVMXJXLGH ± IRNXVJUXSSHU PHG XQJGRP L

3UHVHQWDMRQVUXQGH 1RWHUHU NMiQQ DOGHU IDJUHWQLQJ
+DU GHUH KiUW RP NXOWXUNRUW IRU XQJGRP"

- -\$

R .MHQQHU GHUH LQQKROGHW L NRUWHW KYRU GHW JMHOG
R +YRU KDU GHUH KiUW RP GHW" NLQRUHNODPH ,QWHUQ
YHQQHU EHNMHQWH"

- 1(,

R >DU PHG XWVNULIWHU IUD KMHPHVLGH PHG ORJR RJ D
YLVHV KYLV 'QHL')RUNODU NU KDOYnUHW PDNV M
LGHUWW IHVWLYDOHU WHDWHU NRQVHUWHU P P 0DQ
EHWDOHU@RJK+YDWHQV GHUH RP GHQQH RUGQLQJHQ"

(U GHW QRHQ DY GHUH VRP KDU NXOWXUNRUWHW" +YRUIRU KYRUIR

- +DU GHUH YXUGHUW n VNDIIH GHUH NXOWXUNRUWHW" +YRUIRU

(YHQWXHOW (U NXOWXUNRUWHW DNWXHOW IRU GHUH")RUNODU

- >5\|ONH @ +YLONH NXOWXUWLOEXG ILQQHV KHU" 5HLVHU GH
5RJDODQG IRU n Jn Sn NLQR NRQVHUWHU IRWEDOONDPSHU RV
UHLVH WLO 6WDYDQJHU"

'HUH VRP KDU KDU KDWW NXOWXUNRUWHW KYD EUXNHU EUXNWH G
+YD VODJV NXOWXUWLOEXG EHQ\WWHU GHUH JHQHUHOW"

*DQVNH In KDU Vn ODQJW VNDIIHW VHJ NXOWXUNRUWHW L 5RJDODQ
+DU GHUH QRHQ WDQNHU RP NXOWXUNRUWHW EXUGH Y UW DQQHUO

- %HGUH PHG JHQHUHOO DOGHUVUDEDWW" 'YV IRU DOOH XWHQ
- %XUGH GHW Y UW JUDWLW"
- +YD V\QV GHUH RP PnWHQ PDQ VNDIIHU VHJ NRUWHW Sn" EHV
- %XUGH GHW Y UW DQGUH WLOEXG L NRUWHW" I HNV URFNHNC

+DU GHUH QRHQ WDQNHU RP KYRUGDQ PDQ NDQ Jn IUHP IRU n JMjU
(U GHW QRHQ VRP YLO WLOIj\H QRH"

,QWHUQDWLRQDO 5HVHDUFK ZZZZLWXXVHR RI 6WDYDQJHU \$6

6SjUUHVNMHPD IRU ZHE XQGHUVjNHOVH EODQW

Page#0

Først noen spørsmål om virksomheten

Quest#

I hvilken kommune er virksomheten lokalisert?

Page#1

Quest1

Gi en kort beskrivelse av virksomheten

Quest2

Ca. hvor mange årsverk har virksomheten?

(0 - 999)

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Quest3

Ca. hvor mye omsatte virksomheten for i 2008 (i 1000 kr)?

(0 - 99999999)

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Quest2

Hvilke av virksomhetens tilbud tiltrekker seg ungdom?

Så vil vi gjerne få spørre dere om kulturkortet for ungdom

PAGE # 7

QUEST6

Hvilke rabatter og eventuelt andre goder gir dere unge med kulturkort?

QUEST7

Hvilken avtale har dere med fylkeskommunen når det gjelder ordningen med kulturkort for ungdom? (F.eks. refusjonsordning, tilskudd, markedsføring, besørger rabatter selv)

QUEST8

Hva var viktig for virksomheten da den besluttet å delta i ordningen med kulturkort for ungdom?

Quest9

Gi en beskrivelse av virksomhetens erfaringer med å være med i ordningen kulturkort for ungdom.

Page#2

Quest19

Har ungdoms besøk til virksomhetens arrangementer endret seg etter at dere ble med i kulturkortordningen?

- Markant økning
- Noe økning
- Ingen endring
- Noe nedgang
- Markant nedgang
- Vet ikke / ikke aktuelt

Quest10

Kommentar

Page#1

Quest13

Hva fungerer godt i ordningen med kulturkort for ungdom?

QUEST14

Hva fungerer mindre godt i ordningen med kulturkort for ungdom?

PAGE1

QUEST15

Vil du anbefale andre arrangører å være med i ordningen?

- Ja
- Nei
- Vet ikke

QUEST16

Kommentar

QUEST20

Har du innspill til endringer i kulturkortordningen?

QUEST17

Det var siste spørsmål, er det noe du vil tilføye?
