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&217(67$&,Ï1 '(/ (6&5,72 '(62/,&,78' $5*80(1726 < 358(%$

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(O (VWDGR GH)LVFDODQGLD FXPSOLy FRQ ODV REOLJDFL

OD OLEHUWDG GH SUHQVD \ H[SUHVLyQ GHO DUWtFXOR HQ U

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$%5(9,$785$6

'HUHFKRV +XPDQRV ''++

&RQYHQFLyQ $PHULFDQD GH 'HUHFKRV +XPDQRV &$'+

6LVWHPD ,QWHUDPHULFDQR GH 'HUHFKRV +XPDQRV 6,'+

&RPLVLyQ ,QWHUDPHULFDQD GH 'HUHFKRV +XPDQRV &,'+

&RUWH ,QWHUDPHULFDQD GH 'HUHFKRV +XPDQRV &,'+

&RUWH ,QWHUQDFLRQDO GH -XVWLFLD &,-

7ULEXQDO (XURSHR GH 'HUHFKRV +XPDQRV 7('+

&RUWH 6XSUHPD GH -XVWLFLD &63

-XQWD GH 3RVWXODFLyQ -3

/H\ 2UJiQLFD GHO 3RGHU -XGLFLDO GH)LVF/23-)

ÏUJDQR ,QWHUQR GH &RQWURO 2,&

)8(17(6 '(&2168/7$

%LEOLRJUDItD

*DUFtD 5DPtUH] 6HUJLR HW DO /D /LEHUWDG GH ([SUHVLy

*RUGLOOR $JXVWtQ 3URFHGLPLHQWR $GPLQLVWUDWLYR $

&DVRV &RQWHQFLRVRV 2SLQLRQHV &RQVXOWLYDV H ,QIRU

6LVWHPD ,QWHUDPHULFDQR

&RUWH ,'+ &DVR ÈOYDUH] 5DPRV 9V 9HQH]XHOD ([FHSFLy

&RVWDV 3iUUDIR

&RUWH ,'+ &DVR %iPDFD 9HODVTXH] 9V 6XQWHQFLD GH

6HULH & 1R

&RUWH ,'+ &DVR %DUEDQL 'XDUWH \ RWURV 9V 8UXJXD\ )R

GH RFWXEUH GH 6HULH & 1R

&RUWH ,'+ &DVR +HUUHUD 8OORD 9V &RVWD 5LFD ([FHSFL

\ &RVWDV 6HQWHQFLD GH GH 6HULH & 1R SiUUV

&RUWH ,'+ &DVR ,YFKHU %URQVWHLQ 9V 3HU~)RQGR 5H

IHEUHUR GH 6HULH & 1R

&RUWH&DVR .LPHO 9V $UJHQWLQD&RQWUD 6HSDUDFLRQ GH
6HULH & 1R SiUU

&RUWH ,'+ ³/D ÒOWLPD 7HQWDFLyQ GH &ULVWR´ 2OPHGR %

&RUWH ,'+ &DVR /ySH] \ RWURV 9V 3URYHHGRUHV ([SRUWDGRUHV
&RVWDV 6HQWHQFLD GH GH QRYLHPEUH GH 6HULH &

&RUWH ,'+ &DVR 3HUURQH \ 3UHFNHO 9V $UJHQWLQD SiUU

&RUWH ,'+ &DVR 5LFDUGR &DQHVH 9V 3DUDGHQWHV RLQDGH
GH DJRVWR GH 6HULH & 1R 3iUU

&RUWH ,'+ &DVR 7HUURQHV 6LOYD \ 2WURV 9V 3HU~
([FHSFLRQHV 3UHOLPLQDUHV)RQGR 5HSDUDFLRQHV \

&RUWH ,'+ &DVR 7LX DQ WR9QGR*XDWHPDODFLRQHV \ &RVWD
QRYLHPEUH GH 6HULH & 1R

&RUWH ,'+ &DVR 9DOOH -DUDPLOOR \ RWURV 9V &RORPELD
GH GH QRYLHPEUH GH 6HULH & 1R SiUU

&RUWH DVR 2HOiVTXH] 5RGUtJXH] 9V +RQGXUDV)RQGR Si

&RUWH ,'+ &DVR =HJDUUD 0DUtQ 9V 3HU~ ([FHSFLRQHV

&RVWDV 6HQWHQFLD GH GH IHEUHUR GH 6HULH & 1R

&RUWH ,'+ &RQGLFLyQ MXUtGLFD \ GHUHFKRV GH ORV PLJU

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$FWXDFLRQHV DQWH HO 6LVW0

$63(&726 35(/,0,1$5(6 '($'0,6,%,/,'$'

&RPSHWDHQFLDO &RUWH ,QWHUDPHULFDQD

/D &RUWH,'+ HV FRPSHWHQWH HQ WRGDV ODV PDWHULDV TXH OH FRQILHUH OD
FXHVWLRQHV GH GHUHFKR FRQ SUHVXQWDV FRQVWLWXFLRQHV
HVWDEOHFLGDV HQ ORV WUDWDGRV LQWHUQDFLRQDOHV GH
YLRODFLRQHV FRPHWLGDV HQ FRQWUD GH FXDOTXLHU
(V FRPSHWHQFLD GHO WULEXQDO HMHUFLGD HQ WRGR HO WHUULWRULR
VH FRPHQVLHUH UHVROYHUH LWGRLUHFWDPHQWH)GHVFDUWDQGR
UDWLILFDGR OD SHUVRQDOLGDG MXUtGLFD GHO VLVWHPD

([FHSFLyQ SUHOLPLQDU

$JRWDPLHQWR GH ORV UHFXUVRV LQWHUQRV

(O 6,'+ VROR GHEH LQWHUYHQLU FXDQGR ODV \ ORV SHWLF
GLVSRQLEOHV GHELGR D VX FDUiFWHU VXEVLGLDULR \DHF
DXWRULGDGHV QDFLRQDOHV \ HVHSHFLDOPHQWH HO DJRWD
OHJLVODFLyQ LQWHUQD FRQFUHWR VH SUHFLVD TXH ODV S
UHFXUVRV GLVSRQLEOHV TXH)LVFDODQGLD WLHQH HQ V
$GPLQL PðÈ DQL 5HFXUV0O

HUDQ LGyQHRV \ HIHFWLYRV SDUD OD WXWHOD \ SURWHF

SHWLFLRQDULRV

(VWR EULQGD (O DSDUDWR MXGLFLDO GH)LVFDODQGLD HV

HIHFWLYRV SDUD OD SURWHFFLyQ GH ORV GHUHFKRV GH OF

(O DUWtFXOR D GH OD &RQYHQFLyQ VHxDODHTQXHDSDUD

DQWH OD &RPLVLyQ GH FRQIRUPLGDG FRQ ORV DUWtFXORV

LQWHUSXHVWR \ DJRWDGR ORV UHFXUVRV GH OD MXULVGL

LQWHUQDFLRQDO JHQHUDOPHQWH UHFRQRFLGRV

3DUD TX[HHHSVWLDQHVHD YiOLGD GHEH UHDOL]DUVH HQ ODV H

GH QR KDFHUOR VH SUHVXPH OD UHQXQFLD WiFLWD SRU S

'HQWUR GH HVWH PLVPR RUGHQ GH LGHDV OD &RUWH KD

DRWDPLHQWR GH ORV UHFXUVRV LQWHUQRV HVWi FRQFHEL

GH UHVSRQGHU DQWH XQ yUJDQR LQWHUQDFLRQDO SRU DF

RFDVLyQ GH UHPHGLDUORV FRQFRXQDLGGHRSLFRVPHXGLRVGR

GHIHQVD GHO (VWDGR

(VWRV UHFXUVRV GHEHQ DJRWDUVH HQ VX LQWHJULGDG Q

GHQWUR GHO SURFHGLPLHQWR R FRQ XQD VHQWHQFLD LQV

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FRQRFLPLHQWRV&HWDDVYtFWLPDV SDUD TXH KLFLHVHQ XVR
QR KDFHUOR

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(O (VWDGR GH)LVFDODQGLD FXPSOLy FRQ ODV REOLJDFL
OD SURWHFFLyQ MXGLFLDO QL D ODV JDUDQWtDV MXGLFLD
UHODFLyQ FRQ HO GH OD &$'+

/D &RUWH,'+ VH KD SURQXQFLDGR UHVSHFWR DO DUWtFXOR
OHJDO HO FXDO DEDUFD ODV FRQGLFLRQHV TXH GHEHQ FX
DTXpOORV FX\RV EHQHILFLRV VH RWRUJD HQ HVWH SURFHVR
SUHFHSWRRGEHUHFKR GH DFFHVR D OD MXVWLFLD GHO FXD
(VWDGRV GH QR LQWHUSRQHU REVWiFXORV D ODV LQYHVWLJD
GH TXH VXV GHUHFKRV VHDQ GHWHUPLQDGRV R SURWHJLGR
TXH GLILFXOWH HO DFFHVR GH ORV LQGLYLGXRV D ORV
QHFHVLGDGHV GH OD SURSLD DGPLQLVWUDFLyQ GH OD MXVWL
FRQWUDtGDV SRU HO (VWDGR

$GHPiV HO 7ULEXQDO KD VRVWHQLGR TXH ODV IRUPDOLGD

GHPRFUiWLFD HQWHQGHUVH TXH OD H[SUHVLyQ \ OD GLIXVL

VRQ LQGLYLVLEOHV GH PRGR TXH XQD UHVWULFFLyQ GH

GLUHFWDPHQWH \ HQ OD PHGLGD HQ TXH OD UHVWULFFLyQ

WLSR GH DFWXDFLRQHV DFDUUHDUi XQ RUGHQ S~EOLFR

(O FRQFHSWR GH RUGHQ S~EOLFR UHFODPD TXH GHQWUR

PD\RUHV SRVLELOLGDGHV GH FLUFXODFLyQ GH QRWLFLDV

D OD LQIRUPDFLyQ SRU SDUWH

H[LVWHQ GRV YHUWLHQWHV GHO GHUHFKR HVJULPLGR SXH

DUELWUDULDPHQWH PHQRVFDEDGR R LPSHGLGR GH PDQLI

WDPELpQ SRU RWURV

H[SUHVLyQ GHO SHQVDPLHQWR DMHQR

(Q HO SUHVHQWH FDVR HO (VWDGR FRQVLGHUD LPSRUWDQ

DOJXQD UHVWULFFLyQ R FHQVXUD

UHVSHWy \ JDUDQWL]y OD OLEHUWDG GH H[SUHVLyQ \ SHQV

'HO SUHVHQWH FDVR VH GHULYD HO FXPSOLPLHQWR GHO (

H[SUHVLyQ \ SHQVDPLHQWR

GHUHFKR VHJ~Q OR HVWDEOHFLGR SRU OD &RUWH QR VRO

GHEH REVHUYDUVH GHVGH XQ SODQR FROHFWLYR SXHV LP

[15] &DVR ÈOYDUH] 5DPRV 9V 9HQH]XHOD ([FHSFLyQ 3UHOLPLQDU

[16] ³/D ÒOWLPD 7HQWDFLyQ GH &ULVWR´ 2OPHGR %XVWRV \ RWURV

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[18] 2SLQLyQ &RQVXOWLYD 2&

'HUHFKR DL SDFLyQ WLFD \ SULQFLSLR GH QR GLVFULPL

(O DUWtFXOR GH OD &RQYHQFLyQ HV XQD QRUPD GH FDU

WRGDV ODV GLVSRVLFLRQHV GHO WUDWDGR \D TXH GLVSR

JDQWL]DU HO SOHQR \ OLEUH HMHUFLFLR GH ORV GHUHF

GLVFULPLQDFLyQ DOJXQD´ (V GHFLU FXDOTXLHUD VHD HO

TXH SXHGD VHU FRQVLGHUDGR GLVFULPLQDWRULR GHVIDYR

JDUDQWL]DGRV HQ OD &RQYHQFLyQ HV

$GHPiV (HO SULQFLSLR GH OD \SHUIRUPDQFLD GH OD FRQVWLWX\H XQ GDWR VREUHVDOLHQWH HQ HO VLVWHPD PXFKRV LQVWUXPHQWRV LQWHUQDFLRQDOHV \ GHVDUUR LQWHUQDFLRQDOHV

'H LJXDO PDQHUD SDUD HO SULQFLSLR GH LJXDOGDG DQWH OD OH\ \ Q DFWXDFLyQ GHO SRGHU GHO (VWDGR HQ FXDQWR D VX FDSDFLGDG JDUDQWtD GH ORV GHUHFKRV KXPDQRV

(Q WHDQOWVLGR DO KDEHSUVRHFHLWHRGLHJDVGHROHFFLyQ FRQ DVSDJR D O
OD &RUWHVWLPHWOHQWHLRQHV ODV SHUWLQHQWHV ODV SHUVRQDV QR YLVH YXOQHU
GHUHFKRGDGDDLQJXHO OD OH\

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3RU ODV UD]RQHV GH MXUH \ GH IDFWR DQWHULRUPHQWH
FRQVDJUDQ HO DUWtFXOR GHO 5HJODPHQWR YLJHQWH GH
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35,0(52 6H DGPLWD OD SUHVHQWH FRQWHVWDFLyQ DVt FR
UHVROYLHQGR FRQIRUPH D GHUHFKR

6(*81'2 6H YDORUH35526('(1&,$(DOHH ([FHSFLyQ 3UHOLPLQDU SR
&RPSHWHQFLDQH 0DWHULDH UHODFLRQDGD FRQ HO DJRWDP
ODV SUHVXQWDV YtFWLPDV 0DULDQR 5H[0DULFUX] +LQRM
TXHGDGR GHPRVWUDGR6HHSGROLFLD GH)LVFDOQGLD FXHQWD FRQ
SDUD UHVROYHU GH ODV FRQWURYHUVLDV VXVFLWDGDV HQ

7(5&(52 6H GLFWH VHQWHQFLD,1GH,67(1&,SYHD QXHUGHVSFRQVDEO
LQWHUQDFLRQDOHUGHDVLVFDHDXQGLDSYLRODFLRQHV D GHUHH
\ WRGRV HVWRV HQ UHODFLyQ DO DUWtFXOR
YtFWLPDV 0DULDQR 5H[0DJGDOHQD (VFREDU \ 0DULFUX] +